

Version Control

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1.0	18/07/2019	Original publication
1.1	22/07/2019	Amendment to 18.2 Removal of 4th bullet point, as this duplicated 18.4
1.2	23/08/2019	Amendment to 22 Inclusion of DCMS notices content
1.3	26/09/2019	Amendment to Section 1 Change of date given for interviews of shortlisted applicants.



Industrial 5G Testbeds and Trials: Manufacturing and Logistics Competition Guidance and Overview

Section 1: Dates and Deadlines	1
Section 2: Industrial 5G Testbeds and Trials Overview	2
5G Testbeds and Trials Programme	2
Industrial 5G Testbeds and Trials Projects: Manufacturing and Logistics	2
Vision	3
Challenges to Industrial 5G	3
Projects Description	6
Section 3: Competition Guidance	8
Introduction	8
Funding	8
Common Scope Elements	10
Scope for Manufacturing	12
Scope for Logistics	12
Requirements and eligibility	12
Participation	14
Coordination Action	15
Benefits and Reporting	16
Competition process	16
How to apply	18
The application form	19
Competition questions	22
Section 1: The business case (50%)	23
Section 2: Project delivery (32.5%)	25
Section 3: Funding and added value (17.5%)	26
Other funding from public bodies	28
Project Finance Forms	28
Other 5GTT Programme projects	29
Annex A	32

Section 1: Dates and Deadlines

Competition Opens	18 July 2019
Briefing Events	<u>Sector engagement events:</u> 22 July 2019 - Glasgow / Glasgow Uni 24 July 2019 - Southampton / Solent Conference Centre <u>Competition briefing event:</u> 23 July 2019 - Digital Catapult Conference Space, 101 Euston Road, London
Clarification Questions Receipt Deadline	30 August 2019
Competition Closes	Midday 10 October 2019
Shortlist Applicants Notified	October 2019
Interview Shortlisted Applicants	w/c 28 October 2019
Successful Applicants Notified	November 2019
Grant Claim Period	From 01 January 2020 to 31 March 2022

For enquiries or questions relating to this competition, please contact industrial5gtt@culture.gov.uk

Please send completed application forms and supporting documents to industrial5gtt@culture.gov.uk

Section 2: Industrial 5G Testbeds and Trials Overview

1. 5G Testbeds and Trials Programme

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 Government has allocated £200 million from the National Productivity Investment Fund to the Programme 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, and some of the social and economic challenges facing the UK now and in the future.

The 5GTT Programme has made a number of investments in collaborative projects since 2017. For full details, see our recent [5GTT Programme Update](#).

The Programme is currently developing new investments, trialing in depth applications 5G technology, including large scale integrated testbeds in both urban and rural settings, and this programme of coordinated sector specific testbeds and trials.

2. Industrial 5G Testbeds and Trials Projects: Manufacturing and Logistics

The Industrial 5G Testbeds and Trials competition is making available UK Government investment to trial new industrial 5G services and applications in the manufacturing and logistics industry sectors. The aim of these projects is to demonstrate the value of 5G beyond enhanced mobile broadband by targeting industrial users that can help improve efficiency and productivity in the UK economy, and helping the UK lead the development of enterprise use cases of 5G internationally.

DCMS is seeking fully costed proposals led by private sector companies. This will include development and leading the delivery of the project, pro-actively encouraging participation from small and medium sized enterprises (SMEs), and ensuring access to local infrastructure assets, services and data. The projects will explore 5G deployment and industrial use cases in the manufacturing and logistics sectors. We are seeking involvement from a range of companies that have the potential to contribute to the testbeds and trials, such as system integrators, mobile and fixed network operators, and equipment suppliers. Public sector organisations may also be involved.

3. Vision

5GTT plans to invest in several projects across manufacturing and logistics which will be led by the private sector. This will involve a range of private sector organisations (for example, manufacturers, ports, logistics companies, wireless network or service providers, and equipment suppliers, small innovative enterprises) and may involve public sector organisations. The project will provide the opportunity to use developing technologies in the innovative delivery of services to businesses, to improve the quality of industrial processes and working conditions of individuals participating in them. It will also open the potential for economic development by stimulating the

development of an industrial 5G ecosystem involving multiple industry sectors.

4. Challenges to Industrial 5G

We have identified a number of challenges to the successful deployment of 5G in industrial settings, detailed below. Our aim is for Industrial 5G Testbeds and Trials to address these challenges and identify/address new ones. A proposal should consider how it will impact these challenges and/or identify different challenges.

4.1. Building consensus around 5G in industrial environments

The key challenge is how to link industrial sectors with the opportunity of 5G for digital innovation. Applicants will need to consider the body of work already available on understanding the possible requirements from industrial sectors for 5G, for example, [Made In 5G](#) by Digital Catapult, as well as help to co-test/co-trial technical solutions that address these requirements properly.

There is no clear alignment between the telecommunications and industrial sectors, even though membership and participation in 3GPP bodies has significantly increased to include vertical sector organisations. The key focus for technical collaboration between the Industrial 5G Testbeds and Trials projects will centre around an overarching framework of best practices and approaches to bring together the learnings and create a clear guide for what the adoption of 5G means and how can that be achieved for vertical industries, and in turn the mobile industry.

There appears to be a language gap and cultural barriers between the mobile/telecom industry and the vertical sectors it is looking to work with. There are very different digital services supply chains. There is insufficient awareness of the key features of 5G and how it differs from 4G or other existing connectivity they have already in place. These projects should consider how these barriers can be overcome.

Projects should engage during delivery through educational workshops and other targeted events, to bring together experts from across the industrial technology ecosystem to create a coherent view of the technology to ensure that 5G is incorporated as a technology building block, including working with other grant funded initiatives. For example, Made Smarter, the UK-government backed Industry 4.0 Accelerator initiative, is designed to drive UK manufacturing growth, productivity and transformation through the implementation of cutting-edge technology solutions.

Applicants should be prepared to describe their plans to contribute to this consensus building and how they will collaborate to bring the industrial 5G concept to maturity.

4.2. Availability of 5G-enabled Industrial Components

Applicants should consider how they intend to factor in the expected availability of the 5G services and devices featured in their proposals.

Proposals should highlight the advanced network features, terminal equipment, sensors and controls, they intend to deploy in their testbed. They

must assess the risk and consequent impacts associated with supply and expected high-cost of the devices throughout the duration of the proposed project.

5G coverage will take time to be in place beyond city centres eMBB, so it is necessary to consider 'closed' environments, where local coverage/private networks and infrastructure can be deployed, as long as there are considerations for replicability, interconnectivity and interoperability.

4G and 5G will co-exist for the next decade, with 4G underpinning 5G delivery during the rollout phase. Especially for industries that require coverage (e.g. logistics for last mile or inter-hub support), it makes sense to focus on how to make the adoption easier and to de-risk it through considering 4G, 5G, Wifi, and low power networks together.

Projects are encouraged to learn the lessons of integration and testing from existing use cases from around the world. They should mitigate operational risks by validating deployments with early use cases.

4.3. **Spectrum and Operator Models**

The availability of suitable spectrum is an important aspect in the deployment of 5G services for industrial applications. The key thing to consider is the type of spectrum that will be needed to be made available for the testbeds and trials, its availability for test purposes, and the opportunity for the participants in the testbeds, both incumbents and potential entrants, to get access to spectrum for commercial use beyond the trials themselves.

Applicants should consider the type of spectrum that different testbeds will require and any associated issues of licensing, protection of, or from, existing users, and band availability.

Applicants should provide indications of the spectrum demands of the different initial use cases and the expected duration of the requirement. Indicative requirements for long-term access to the spectrum beyond the proposed project should also be provided.

4.4. **Coverage**

The network design and its implementation by the project must ensure coverage on sites at the selected location(s) and between sites of the testbed, such as, but not limited to:

- Office areas.
- Factories – of any type.
- Production and delivery sites – the first and last mile.
- Logistics hubs - a sea port, air port, freight terminal
- Corridors between sites.

Coverage in this context means a solution for the proposed testbed that meets significant deployment challenges, to ensure at least:

- 1. That radio spectrum is available and accessible by appropriate

planning. For example, in dense demand areas - this may require a dense network of small cells, more macro-cells or a combination. It will also be important to consider backhaul and inter-connect to public and wider networks.

- 2. The availability, continuity and integrity of the network service by:
 - Using 5G technologies and services (e.g. eMBB, mMTC, URLLC) including:
 - New Radio.
 - WiFi 6 and other tailorings of IEEE 802.11 appropriate to integration with 5G such as WiGiG.
 - Minimise 'pinch-points', where heavy loading rather than lack of signal creates a not-spot.
 - Integration of legacy communications technologies and the equipment and services they enable, such as:
 - Industrial automation systems, wired and wireless.
 - WiFi 1-5.
- 3. Continuity of access for people and things to use platforms, tools, services and applications, for example by a single sign-on that accommodates roaming.

Applicants should consider how their proposals will implement these three pillars of coverage and continuity.

4.5. **Safety and Security**

Applicants should consider how they will ensure their proposed solutions are safe and secure with respect to the requirements of industrial (real-time) applications.

The proposed approach should describe how security properties such as availability, confidentiality, authenticity, integrity and accountability of information will be supported by effective measures to detect attacks, protect the testbed against them, restore service if necessary, and document them for analysis. This will require a risk assessment of the testbed concept of operations and its associated safety hazards that involves experts in both safety and security. The approach used should demonstrate adequate safety and security throughout the lifetime of the testbed at all locations where it is implemented.

4.6. **Open Access**

The goal of the 5GTT Programme is to foster, build and lead the UK 5G ecosystem, linking research and industry to develop innovative 5G-enabled applications and services that fulfill a clear business need. Apart from the financial challenges associated with the development of those testbeds and trials, openness of those testbeds to third parties is also a significant challenge. This is largely because of issues with sharing sensitive commercial information and operations with potential competitors. As such, open and standard APIs should be employed by Industrial 5G Testbeds and Trials projects with a transparent engagement framework.

Applicants should be prepared to describe their approach to open access.

5. Projects Description

The various elements that we envisage will inform the development of the Manufacturing and Logistics projects are summarised below in order to help guide the development of your proposal. Applicants should refer to the Competition Guidance section to understand the requirements proposals must fulfil.

Element	Description
5G Focus	<p>The project will need to include a significant 5G element, including:</p> <ul style="list-style-type: none"> ● Allowing for trials of industrial 5G use cases across manufacturing and/or logistics industry sectors. ● Allowing for the use of 5G core network capabilities. ● Consideration of options for a network connectivity deployment pilot that identifies the lessons to be learned for the deployment of large scale 5G radio access networks (potentially including small cells) in high density areas. <p>We will expect the project to encourage the wider deployment of fibre networks to support 5G mobile connectivity.</p> <p>Use cases must be based upon genuine commercial drivers for success and sustainability. They must demonstrate ultimate customer benefit as well as showcasing a technical capability.</p>
Technology & Infrastructure	<p>At a high level, the project is likely to include network deployment, covering the convergence of networking technologies and approaches, including Industrial IoT capability, from widespread installation of connected sensors and actuators, industrial plant (including robots), right through to data provisioning and enabling software platforms. The project may also leverage existing network technology</p>
Open architecture	<p>The project will need to develop an approach to best deliver an open architecture with a suite of application programming interfaces (APIs) able to work with applications developed by other parties. The aim here is that an experimenter can access the testbed and provision their own slice of a network, get access to network capacity, sensor information/data, anonymised data to trial their product, create new services, and roll out new solutions at scale.</p>
Network elements	<p>Our expectation is that the project will include (for instance but not be limited to):</p> <ul style="list-style-type: none"> ● Industrial management data and systems. ● Connectivity appropriate to the testbed requirements including neutral hosts.

	<ul style="list-style-type: none"> ● Specific sites with dense/small cells, fixed wireless access and integrated WiFi. ● Integration with legacy industrial automation communications systems. ● The project should include settings that require different technical solutions to provide coverage. ● The project might involve deploying 5G as an integrated network of networks rather than simply be based on widespread deployment of 5G New Radio.
Management platform	The capabilities for the project to operate as a 'management platform' for applications and services together with a 'programmable' infrastructure, open to organisations, particularly SMEs, for the development of applications and services.
Data stewardship	An appropriate function for data stewardship, to address issues such as data collection, data access and usage rights, data governance and management and consideration of data related risks of the project.
Security and resilience	Data, infrastructure and network security and resilience will need to be factored into the project from the design planning and scoping onwards.
Geographic scale	<p>A manufacturing project testbed must be implemented in at least one location. It may be implemented at multiple locations and/or sites within a location. Locations and sites must be connected.</p> <p>A logistics project testbed must be implemented at separate locations across a region, connecting at least two sites which could include:</p> <ul style="list-style-type: none"> ● Production and delivery sites – the first and last mile. ● Logistics hubs - a sea port, air port, rail terminal, or warehouse ● Corridors between sites.
Innovation environment	<p>The project will create an innovation environment that can:</p> <ul style="list-style-type: none"> ● Accommodate a large number of connections, and many applications. ● Provides a means to access multiple connected locations. <p>It will require a clear vision and strong leadership from the project partners and other stakeholders which will have to include new ways of thinking and working for all parties. Governance and commercial risks will have to be managed carefully, and steps taken to build commercial confidence.</p>
Delivery	<p>The project will be delivered and managed by a lead delivery partner that has the appropriate status and authority to drive through a complex programme of delivery, manage public funding and attract commercial investment and participation.</p> <p>It may be appropriate to assign a key delivery partner the role of technical project management, and that this partner should have the</p>

	appropriate status and authority to lead the technical development of the project.
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Section 3: Competition Guidance

6. Introduction

The Secretary of State for Digital, Culture, Media & Sport (DCMS) [announced on 12 June 2019](#) that the Government is investing £40 million in sector specific 5G testbed and trial projects across UK industry, starting with the manufacturing and logistics sectors.

This document provides guidance on the scope, eligibility conditions, funding and the structure of the application and should be read in conjunction with the project overview in Section 2.

This competition is open to private sector led proposals from across the UK. Public sector organisations, research organisations and academic institutions may also be included in consortia.

7. Funding

The 5GTT Programme is making available funding for this competition, subject to the government's Spending Review outcome. Funding will come from the £200 million Government has allocated from the National Productivity Investment Fund to the 5GTT Programme 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.

Funding is available to address 5G projects across the two sectors of manufacturing and logistics. Projects should be prepared to enter into a grant funding agreement (a draft agreement is provided separately for information - one for [manufacturing projects](#) and one for [logistics](#)) by December 2019 and commence grant funded activities in January 2020.

Sector	Number of Projects	Project Funding per Project
Manufacturing	4-6	£3-4 million
Logistics	2-3	£5-10 million

Projects must complete all grant funded activities by 31 March 2022. Non-grant funded activities can continue beyond this date. Successful applicants will be required to have an approved plan in place prior to this date to ensure the sustainability of non-DCMS funded activities beyond the grant funding period.

Given the capital infrastructure that may be required in the delivery of testbed(s), DCMS expects proposals to identify the larger investments that will occur in the early stages of the project. Applicants should note that an approximately flat profile of spend is anticipated across each April-March financial year of projects. Transfer of funding between years once allocated will not be possible unless agreed by DCMS and will be subject to the 5GTT Programme's overall budget profile for individual years.

The applicants who are selected through this competition will need to follow the process and criteria that will be set out in a DCMS grant funding agreement to access funding for individual activities under the Project.

DCMS funding available under the funding agreement will need to be:

- Complemented with additional financial and non-financial contributions by the private sector partner(s) and/or other project participants (including public sector, research and academic participants) as agreed with the 5GTT Programme during the development of the project; and
- Compliant with State Aid rules.

Please read our [General Guidance for Grant Applicants](#), including funding rules guidance, for more information on the different categories of funding and the rules around our State Aid framework. This guidance contains general information relating to this competition and the processes DCMS will use to deliver it. The 5GTT Programme expects 1:1 matched funding across the total of all of its investments, including 5GTT Industrial 5G Projects, but different projects and types of business can receive different levels of grant funding within that. Where a proposal does not propose 1:1 match funding of DCMS funding, then a clear explanation of why the project is VfM should be included. Please note the maximum grant funding rates for businesses set out below.

For projects under the category of experimental development involving collaboration, the maximum grant allowed towards your eligible project costs under State Aid rules if you are an organisation receiving direct grant funding from DCMS is:

- 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

;

For the purposes of this competition, the EU definition of an SME is used.

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

The [Eligible Project Costs Guidance](#) (provided separately) contains information on which project costs are eligible for funding and how to complete the Project Finance Forms (provided separately).

8. Common Scope Elements

We are looking for projects that support the development of the UK's 5G ecosystem in the manufacturing or logistics sectors by addressing at least two of the following areas (noting the requirement in the General Guidance to constitute experimental development):

- Explore the potential for industrial 5G to deliver benefits, cost savings and streamlining of services for their specific businesses.
- Develop new 5G applications and services that use industrial 5G capabilities, test demand for 5G technologies in general, and understand the skill sets required to develop and deploy them.
- Develop and explore new business models around key 5G technologies, understanding of what it will take to create a sustainable operation for industrial 5G, including developing a working model of the infrastructure, organisation, capability (people, process, technology) and investment required to deploy and operate applications and services.
- Provide a clear assessment and reduce the commercial risks associated with investment in industrial 5G adoption.

Your proposal must:

- Contribute to the creation of innovative industrial 5G trials in the UK, including using or establishing testbed infrastructure for this.
- Demonstrate a good understanding of relevant industry sector requirements and challenges.
- Provide a high-level project plan including milestones related to the setup of a testbed including the deployment and trial activities and reporting planned.
- Contribute to best practices and the development of the 5G UK ecosystem. For example, using test networks and other testbeds and trials that maximise the use of the DCMS investment.
- Demonstrate access to spectrum: the proposal should describe which frequency bands are intended to be used (if any), and how the project will obtain authorisation for their use for the duration of the project.
- Describe what infrastructure will be used in the project, and how it will be sourced.
- Describe what 'user equipment' (mobile devices, modems, industry equipment, smartphones and so on) will be used (if any) in the trials, and how they will be sourced. If devices are not single commercial products, the proposal must also explain how they would be assembled and integrated for the purpose of the trial(s).
- Finish all grant funded work by 31 March 2022, allowing adequate time for use case trials.
- Either design and implement a testbed involving hardware and software or specify very clearly what existing testbed(s) will be used, how they will be

extended to meet the new project requirements, and any user access agreements necessary.

- Demonstrate addressing, in the identified industry sectors, particular challenges that could be met using 5G services.
- Demonstrate advances in the state-of-the-art or innovation in services and applications through the use of 5G in the sector that you have selected.
- Develop trials that de-risk something significantly beyond the capability of today's commercially available mobile networks.
- The project may use an existing operational network. It may also use network elements as currently deployed or upgraded, the construction of new network elements or a combination of both.
- Include plans for collaborating with other 5G Testbeds and Trials projects and the wider ecosystem.
- Include a commitment for all partners to sign a collaboration agreement between themselves before any claim to DCMS for grant funding for the project.
- Include a commitment for all partners to sign the 5GTT [Programme Participation Agreement](#) (PPA - provided separately).
- Include identified benefits of the project and how these will be measured

The proposal must demonstrate the potential to achieve impact in at least one or more of the following areas:

- The UK's International competitiveness.
- Health and safety in the sector - particularly with increasing use and expected use of collaborations between humans and robots / machinery.
- Efficiency, optimisation and productivity increases - benefitting from data analytics.
- New business models.

9. Scope for Manufacturing

Projects in manufacturing will cover a range of manufacturing processes to maximise the range of use-cases that can be examples to be followed in the future. Proposals should identify their target manufacturing scope as outlined by the six illustrative manufacturing process examples below:

- High Value, Low Volume Manufacturing
 - Discrete production (e.g. casting of turbine blades for jet engines).
 - Discrete assembly (e.g. trim and final process for automotive).
 - Process manufacturing (e.g. biotech / cell and gene).
- Low Value, High Volume Manufacturing
 - Discrete production (e.g. textile / weaving cloth for clothes).
 - Discrete assembly (e.g. consumer electronics manufacturing).
 - Process manufacturing (e.g. food & drink / craft beer manufacturing).

10. Scope for Logistics

Projects in Logistics will address an overarching challenge for the industry.

A project based around a logistics hub (airport, sea ports, rail terminals, warehouses) supply chain should address logistical aspects of a particular supply chain, from the point of entry to the end of the supply chain from the hub, including:

- Business to business logistics for multi-modal links between multiple sites in the wide area and the local area.
- Corridors between sites.
- Production and delivery sites – the first and the last mile.
- The producer and the end user.

Below are some examples of potential areas of focus for logistics projects :

- Just in time supply chains - helping to get assets and goods moving more quickly along the supply chain after the point of entry to ensure just in time delivery for the end customer.
- Sustainability - in particular looking at food wastage or quality control monitoring across the delivery lifecycle.

12. Requirements and eligibility

12.1. Application:

- Submissions using the incorrect application form will not be considered eligible.
- Submissions with incomplete or missing Project Finance Forms will not be considered eligible.
- All submission documents must be submitted in the application form provided and file format specified (for attachments).
 - Any document in an incorrect format will result in the entire application not being considered for assessment.
 - Documents must comply with the required length specified in the application form and, where applicable, with the specified structure (including appendices).

12.2. Project:

- The project must be eligible and within the scope for manufacturing or scope for logistics as set out in section 3 above.
- All projects must be carried out in the UK.
- All projects should be business-led consortia.
- To be considered collaborative, at least 2 organisations must be requesting grant funding from DCMS. The lead organisation must request the grant.
- Projects must involve at least one micro, small or medium-sized enterprise (SME).
- 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 their work could not be delivered by one.

- Only UK-based organisations are eligible to receive funding from this call. Projects can include partners that do not receive any funding (for example, non-UK businesses). Their costs will count towards the total project costs, but they do not count as collaborators.
- No single partner can receive more than 70% of the total eligible project costs.
- 70% of total eligible project costs must be incurred by private sector business organisations.
- We expect that grants will be paid to the project lead and distributed to key project partners as you set out in your collaboration agreement.
- We would not discourage a public sector organisation from being a project partner provided their role is clearly defined and they demonstrate added value.

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

Organisation Role	Notes
Project Lead	For all projects this will be a business/industry organisation. The proposal should make it clear why the project lead is the most appropriate organisation to lead the project.
Key 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 Partner	These are any other organisations not receiving grant funding from DCMS or any other public sector source and which will undertake important activities during project delivery. These organisations may be involved in the project governance as appropriate.
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.

13. Participation

DCMS is expecting collaborative bids by industry. The project lead is responsible for ensuring that any other project partners also work with the 5GTT Programme, managed by DCMS and work directly and closely with Digital Catapult, as the DCMS Industrial 5G coordination support partner and advisory function on technical, innovation and commercialisation aspects.

The projects are expected to work closely with UK5G (www.uk5g.org), the national innovation network dedicated to the promotion of research, collaboration and the commercial application of 5G in the UK.

All selected projects will be required to sign up to the 5GTT Programme Participation Agreement (PPA) with DCMS. This outlines how members of the UK 5G ecosystem should collaborate, share knowledge and join-up through the five 5GTT Programme Participation Principles.

The project lead 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).

The project consortium must proactively seek to recruit additional organisations, particularly Small and Medium Sized Enterprises (SMEs), to become project partners through an Open Call around 12 months into the project. For manufacturing projects, this will form part of a Project Development Review as set out below (projects will be required to include details of their open call for additional partners or a detailed plan for doing so). Financial summaries should identify how much funding is allocated for these additional partners (this should be listed as “Future Partners” in the Project Finance Form and, for Manufacturing proposals, in the Finance Summary Form, with a 50% DCMS contribution estimated). Support in accessing small, innovative SMEs will be provided through the innovation coordination programme, provided by Digital Catapult.

Applicants involved in existing 5GTT Programme Projects or considering bidding into other 5GTT projects will not be advantaged or disadvantaged in this or any other competition, similarly for those not otherwise involved. Each proposal will be evaluated on its individual merits.

14. Coordination Action

Your consortium will be required to 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 should be included in the application. Joining up of collaboration activities across potential bidders will be facilitated by the Industrial 5G coordination support function provided by Digital Catapult, which will include technical, innovation, and commercialisation support across the projects. Once underway, projects must be prepared to work with Digital Catapult on collaboration across Industrial 5G Testbeds and Trials projects. An overview of Industrial 5G Innovation Coordination, provided by Digital Catapult, is available at [Annex A](#).

For most projects collaboration across projects is likely to involve joining specific working groups on 5G and Manufacturing/Logistics, that will be setup by Digital

Catapult and UK5G. Your proposal should outline the areas of collaboration in which you are most interested.

The working groups will be used to foster and coordinate collaborative approaches that share learnings, promote broader national industrial adoption of 5G and address the priorities of the programme. Projects will be able to suggest areas of focus beyond those suggested by Digital Catapult, which will be considered on a case by case basis.

Activities should lead to the creation of tangible outputs such as published reports, for example exploring solutions to problems common to those involved.

These cross-project activities will be funded by each consortium including in their financial submissions as part of proposals an allocation a minimum of 2% up to a maximum of 4% of the DCMS project grant, with matched funding contributions also allocated to collaboration costs from consortium partners in alignment with State Aid funding rules.

Following selection of applications for grant funding, DCMS may work with the selected bidders to update plans for collaboration, to align projects where appropriate.

Examples of collaboration deliverables should be identified as specific milestones in project plans.

15. Benefits and Reporting

The proposal should include how impact and wider benefits of the project will be measured. After metrics have been agreed in alignment with the project's and 5GTT Programme's aims, a template recording data for these measures will have to be completed and returned to DCMS as a quarterly deliverable. This benefits realisation information will feed into the 5GTT Programme's evaluation. A selection of the type of metrics we expect is provided in the quarterly template that will be used to collect evidence of dissemination activity and lessons learnt. A [blank template](#) is provided as an accompanying document.

16. Competition process

For this competition, there will be different approaches for the two sectors of manufacturing and logistics. Applications should state which sector they are bidding for and it is important to take note of which is the most relevant process for your application.

16.1. Manufacturing Sector Competition

For manufacturing, DCMS will use a portfolio approach that will ensure a broad range of projects across sub-sectors / manufacturing processes / balance of geographical

location etc. This is to make sure that all projects considered to be above a quality threshold meet the strategic criteria described in this competition guidance.

The Manufacturing Sector Testbeds and Trials competition strand will be assessed based on proposals based on delivery of a single project for the duration of the project but with a Project Development Review around 1 year into the project. At this Project Development Review, each manufacturing project will submit updated proposals for the remaining funding period (to March 2022).

The purpose of the Project Development review is to:

- Help create opportunities for SMEs in order to help projects deliver the 5GTT Programme's aims for impacting the local economy. Updated proposals will require plans for the inclusion of additional partners (particularly SMEs) through an open call.
- Help ensure projects are delivering high quality outcomes by providing an opportunity for both the projects and DCMS to reconsider approaches and strategies and potentially make adjustments. This is in order to maximise the opportunity for successful application trials to take place in the later stages, after infrastructure is in place.
- Help ensure projects are aligned across the Industrial 5G portfolio and working in collaboration, where appropriate, to maximise value for money and achieve common aims.

Proposals should identify in their project plan when they will submit their updated plans for the Project Development Review. This should be at a date between months 10 and 14 from the commencement of the project.

At the Project Development Review, updated plans will be reviewed for approval by DCMS against the projects' stated aims and those of the 5GTT Programme. The projects may use this opportunity to refine their approach or adjust the project's direction. The purpose of this Project Development Review point is not to reduce the number of funded projects, but to ensure projects are continuing to deliver suitable and value for money outcomes based on the developing 5G and industrial landscape. Submissions may propose an increase, reduction or no change in the overall funding envelope.

Evaluation of the revised plans will be in line with the principles of initial proposal evaluations outlined in this document, having regard to project delivery up to the Project Development Review. The potential outcomes envisaged of the Project Development Review are:

- an updated project with an increased scope and/or value; or
- an updated project with no change in scope and/or value; or
- an updated project with a decreased scope and/or value.

DCMS also reserves the right to make additional funding available at the Project Development Review stage for proposals. DCMS expects that, barring exceptional circumstances, projects will not be stopped as a result of the PDR

The applicants should prepare their proposals in response to this competition guidance setting out their plan for the full funding period to March 2022, with expected clear demonstrations and milestones at the end of the period up until the completion of the Project Development Review based on your chosen date for the Review. We suggest allowing a period of 1 month from the submission of updated plans to agreement of any amendments to the DCMS grant funding agreement.

The Manufacturing Sector Testbeds and Trials competition strand will follow these steps:

1. The project lead will submit an application in response to this competition guidance that covers the full funding period up until March 2022. This should include detailed delivery and financial plans for up to the Project Development Review and indicative higher level plans for the remainder of the funding period, including any funding allocated for additional partners brought into the consortium after Project Development Review.
2. Submitted applications will be reviewed to make sure that they are eligible for the competition.
3. Only applications that meet the eligibility requirements of the competition will be assessed.
4. Shortlisted applicants will be interviewed face-to-face by DCMS.
5. The lead applicants will be notified of the funding decision for their project.
6. 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.
7. A grant funding agreement will be issued to successful applicants.
8. All eligible and in scope applications will receive assessor feedback.
9. During month 10-14 of the delivery of the project, the lead organisation will submit a refined/updated plan including delivery milestones and spend profile for the remainder of the funding period.
10. Plans will be assessed by DCMS and the grant funding agreement will be updated to reflect agreed changes.

16.2. Logistics Sector Competition

For the Logistics Sector Testbeds and Trials competition strand, DCMS will take a portfolio approach and focus on bids which will have a range of actors that play a key role across the UK's logistics supply chain. This is to make sure that projects will be ambitious, and meet the strategic criteria described in the 5GSTT Logistics competition brief.

The Logistics Sector Testbeds and Trials competition strand will take applications that cover the full funding period to March 2022. They will be expected to submit fully costed bids, except for any funding allocated for additional partners brought into the consortium after months 12-18, which should be separately identified in the financial narrative. There will be no review point as applied to manufacturing projects above.

1. The project lead will submit applications with detailed financial plans that cover the full funding period to March 2022. Funding allocated for additional partners to be brought into the consortium after months 12-18 should be separately identified in the financial narrative.
2. Submitted applications will be reviewed to make sure that they are eligible for the competition.
3. Only applications that meet the eligibility requirements of the competition will be assessed.
4. Shortlisted applicants will be interviewed face-to-face by DCMS.
5. The lead applicants will be notified of the funding decision for their project.
6. 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.
7. A grant funding agreement will be issued to successful applicants.
8. All eligible and in scope applications will receive assessor feedback.

17. How to apply

You must submit your documents to the following email address by midday on 10 October 2019: industrial5ggtt@culture.gov.uk. You will receive an email acknowledgement of your registration.

The lead partner must submit:

- Your application form (mandatory) with:
 - Project Finance Forms for every organisation (including the lead organisation) in the project (mandatory), this should cover the full grant term for Logistics proposals and up to the Project Development Review for manufacturing proposals.
 - Finance Summary Form for manufacturing proposals, covering the full grant term.
 - Project appendices as pdf documents, labelled correctly as per the appendices guidance in section 9.

Assessment

Once the eligibility checks have been completed, all eligible applications are assessed.

Notification

We will notify the lead applicant if the application is ineligible or out of scope and not sent for assessment with an explanation as to why.

Feedback

Feedback will be provided to all applications that have been assessed. 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.

Shortlisted Applicants

Shortlisted applicants will be provided with a list of questions and requests for further information that must be supplied in advance of the interview.

Interview

DCMS will tell the lead applicant when their interview will be. Interviews are likely to be held in central London.

18. The application form

This section explains the structure of the application form and offers guidance on what information to provide in answer to each question.

The structure is as follows:

- Application details
- Summary of proposed project
- Public description of the project
- Scope question
- Section 1: The business case
 - Question 1: What industry challenges and use cases do you plan to address and what are the benefits of doing so?
 - Question 2: What is your proposed project and its key outputs, trials and demonstrations?
 - Question 3: How will the testbed and trials contribute to society and the local economy?
 - Question 4: How will the testbed and trials support the development of a 5G ecosystem in the UK and support adoption of 5G into your sector?
 - Question 5: What is the plan for the project to deliver a commercially sustainable output?
- Section 2: Project delivery
 - Question 6: What is your project plan, including key activities, milestones and deliverables?
 - Question 7: What is your project governance structure and approach? How will key decisions be made?
 - Question 8: What are the key risks to project success? What is the project's risk management strategy?
- Section 3: Funding and added value
 - Question 9: How does the project ensure that Value for Money is achieved and how have you ensured that the financial proposal for the project is robust?

- Question 10: How does financial support from DCMS and financial contributors add value?
- Other funding from public sector bodies
- Finance overview
- Attached documents
 - Project Finance Forms
 - Finance Summary Form (Manufacturing only)

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.

18.1. Quality Threshold

Any application scoring an average assessment score of 1 or below against any individual competition question, including where an error has been made by the applicant, will not be considered further for shortlisting (Step 1)

All remaining applications with an average assessment score against all competition questions (i.e. the weighted score across all competition questions) of 5 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 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.
- c) 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.

Please make sure that you submit the final version of your application by the deadline. It is the lead organisation's responsibility to ensure that you do not submit a blank or incomplete application.

You should follow these steps:

- You can only use the application form and templates provided. They contain specific information.
- The application form and templates contain specific fields. It is important that you complete each field and submit a fully completed form. Incomplete forms will be considered ineligible and will not be sent for assessment.
- The application form and templates must not be altered, converted or submitted as a different file type.

18.2. Summary of proposed project (not scored)

Guidance: Provide a short summary of the content and SMART (specific, measurable, achievable, realistic, timed) objectives of your project, including what delivery of this project will contribute to the 5G Testbeds and Trials Programme.

This summary is mandatory but not scored. It provides an introduction to your proposal for the benefit of DCMS staff and advisers, government staff and assessors only. It will not be made visible to the public. It should cover, in brief:

- The vision of what will be delivered at the end of the project, including the business need or market opportunity to be targeted.
- The approach to be taken and how this will ensure an on time, cost and quality delivery.
- The difference the project will make to the competitiveness and productivity of the partners involved.

18.3. Public description of the project (not scored)

Guidance: To comply with government practice on openness and transparency of public funded activities, DCMS publishes information relating to grant funded projects. Please provide a short description of your proposal in a way that will be understandable to the general public. We may publish this information for all proposals, including those not awarded funding, so do not include any commercially confidential information, for example, intellectual property or patent details. This description is mandatory but not scored. We would also like to publish the partners involved in your proposal, but this is not mandatory. Please check the appropriate box on the application form to indicate if you are happy for these to be published as well.

18.4. Question: Scope

Guidance: How does this application align with the specific competition scope?

- All applications must align with the specific competition scope criteria as described in the competition brief.
- To demonstrate alignment, you need to show that a clear majority of the project's objectives and activities are aligned with this competition.

19. Competition questions

19.1. Section 1: The business case (50%)

Question 1: What industry challenges and use cases do you plan to address and what are the benefits of doing so? (12.5%)

- Describe the main motivation for the project, the industry challenges and the use cases that grant funded trials and any other planned trials with funding from other sources will address. Your description must identify genuine commercial drivers for success and sustainability, and the particular challenges that could be met using 5G capabilities, and highlight innovative aspects.
- How close to market are the applications or services supporting the use cases that you will be addressing, and how are they differentiated from those currently available with respect to the state-of-the-art?
- Describe how will this project affect your longer term roadmap for new products and services.
- Describe potential additional use cases that the testbed and trials could cover and the wider economic, social, environmental, cultural or political challenges which are influential in creating the opportunity, such as incoming regulations (using the [Horizons tool](#) if appropriate).
- Describe how you will evidence the impact of your testbeds and trials.

Question 2: What is your proposed project and its key outputs, trials and demonstrations? (12.5%)

- Describe the testbed facilities you intend to deliver, or exploit, as part of the project, both in terms of the products or services available for 5G trials and, if any, other non-5G trials. Your description must identify the location, or locations, at which the testbed will be deployed and their role in the testbed.
- Describe the key outputs of your project you will deliver in the first year and in the following period and how these will deliver against the challenges and use cases you have identified
- For manufacturing proposals, you should clearly identify what will be delivered before the Project Development Review
- Describe the system architecture and major components of the testbed, in particular the 5G, and non-5G, technologies that will be supported. Your description must explain how coverage (radio frequency, service continuity and access) will be ensured.
- Describe how you will ensure your implemented solutions are safe and secure with respect to the requirements of industrial (real-time) applications.
- Describe how the testbed will build on any existing infrastructure, such as industrial automation legacy, existing management platforms, or centres of excellence, and what benefits this will offer.
- Describe how the testbed and associated facilities will be provided for trial organisations and developers.
- Describe how you intend to factor in the expected availability of the 5G services and devices featured in your proposals and how you intend to ensure the project takes advantage of the UK's diverse supply chain in telecoms.

You may submit a single appendix as a PDF containing only diagrams, headings and captions, up to 2 pages long to support your answer.

Question 3: How will the testbed and trials contribute to society and the local economy? (7.5%)

Describe how the project will deliver and measure benefits, such as:

- Developing and exploring new business models and applications, and potential benefits to businesses, including productivity improvements.
- Supporting the development of the local economy, including the growth of local businesses, particularly SMEs.
- Benefits to society and consumers such as health, environmental, public safety etc.
- Collaborating with DCMS to identify technical and commercial barriers to 5G deployment.
- Achieving meaningful impacts on security, health and safety, and the efficiency of industrial processes.

- Helping to establish your location as an attractive place for additional companies to invest in areas relevant to your vision.
- Enabling improvements in local infrastructure. This could include, for example, synergies with other local projects including any potential projects under the DCMS Local Full Fibre Networks Programme, and other activities aimed at improving local connectivity.
- Explain how this project fits with your current products, service lines or offerings

Question 4: How will the testbed and trials support the development of a 5G ecosystem in the UK and 5G adoption into your sector? (7.5%)

- Describe how the project will contribute to developing the UK's capabilities in the emerging 5G environment, and particularly in the space where the telecoms industry meets industry sectors which are relevant to your proposal. This should demonstrate a good understanding of relevant industry sector requirements.
- Describe how you will ensure a strong link between the proposed project, wider programme participants.
- Describe your approach to the identification and dissemination of lessons learned and project outcomes
- Describe your plans for collaborative activities with other Industrial 5G projects, supported by the Industrial 5G coordination support function provided by Digital Catapult, to the value of 2-4% of DCMS grant funding.
- Describe how and what the trials will contribute to best practice in the relevant industry sectors.
- Describe your plans to contribute to consensus building around industrial 5G and how you plan to collaborate to bring the concept to maturity.

Question 5: What is the plan for the project to deliver a commercially sustainable output? (10%)

- Describe how the project outputs will deliver value beyond the funding period, including how it they could be further developed, scaled or improved beyond the timeframe or outside of the scope of this project. Detail any follow-on projects or future improvement opportunities currently envisaged.
- Describe your approach to maintaining the availability of the testbed after the grant funding period. This could include:
 - Plans for attracting other trials from initial trial organisations involved in the project or additional trial organisations. This may include 5G and non-5G trials.
 - Potential opportunities for and sources of additional funding outside of those identified in this proposal, over and above any future opportunities for funding from this DCMS programme.
 - How your testbed will be developed on an appropriate open access basis. If it is not appropriate for it to be open, please explain why.

- Describe the project partners' approach to securing follow-on funding or activities for trials to lead towards commercial success.

19.2. Section 2: Project delivery (32.5%)

Question 6: What is your project plan, including key activities, milestones and deliverables? (12.5%)

- Describe the project outputs and how you will deliver these to address the challenges, use cases and opportunities described in section 2 of this competition guidance.
- Provide a project plan that identifies the main work packages including resource, capital and management requirements. These should be clearly linked to the costs detailed in your response to question 9. For each work package describe the purpose, objectives, methodology, deliverables, milestones and resources (effort, equipment, facilities and services) involved, including for proposed collaborative and/or dissemination activities.

You may submit a single appendix as a PDF containing only diagrams, headings and captions, up to 2 pages long to support your answer.

Question 7: What is your project governance structure and approach? How will key decisions be made? (10%)

- Describe your proposed project management processes and governance structures.
- Describe the roles, responsibilities and relevant skills and experience of all partners. In particular, identify the participant(s) who will be responsible for the management and operation of the testbed, and why they have the right skills and capabilities to deliver this.
- Describe how your consortium will deliver this project. How will the organisations achieve more working together than if they were working individually?
- Explain why the project lead is best placed to undertake this role. Business led projects are preferred unless there is a strong justification otherwise.
- Describe which legal entities will own any assets which are paid for by grant funding.
- Describe the details of any vital external parties, including sub-contractors, who you will need to work with to successfully carry out the project.

You must submit a work breakdown structure (including cost of each work package) as a single PDF appendix and up to 5 pages long to support your answer. It must be legible at 100% zoom.

Question 8: What are the risks to project success? What is the project's risk management strategy? (10%)

- Identify the main risks and uncertainties of the project and provide a risk analysis for the project content and approach, with a ranking of the risks and mitigations. Include any cost, timing, technical, commercial, managerial and environmental risks as well as other uncertainties (for example ethical issues, device/service availability issues) associated with the project.
- Describe the track record of relevant project partners in undertaking and exploiting the results of similar projects. Highlight your ability to deliver the proposal on time, to cost and at a sufficient level of quality.
- Identify any internal and external dependencies, support or engagement that is required. Indicate what is agreed at the time of submission, and what is still to be agreed, for example any legal agreements or consents that need to be put in place to enable the works to be undertaken (including land agreements, planning and highway consents, construction contracts, subcontracts, utility agreements, wayleaves, and authorisation to access required radio frequency spectrum).

You may submit a single appendix as a PDF containing only tables, diagrams, headings and captions, up to 2 pages long to support your answer.

19.3. Section 3: Funding and added value (17.5%)

Question 9: How does the project ensure that Value for Money is achieved and how have you ensured that the financial proposal for the project is robust? (10%)

- Detail the estimated project cost for each work package. Make clear the level of contribution from each project participant and the level of grant funding requested from DCMS. A summary of this information should be provided in the financial summary table in the application form.
- A narrative description summarising what each project participant will be delivering and the costs associated.
- Describe the contributions in kind from each project participant.
- Set out how you will ensure value for money through your sourcing approach and supply chain.
- Identify the amount of DCMS grant and other funding you will set aside for working with other participants in Industrial 5G and potentially across the 5GTT Programme, supported by the Industrial 5G Testbeds & Trials Working Groups and UK5G. A minimum of 2-4% of grant funding is required.
- Provide a cost breakdown of forecast expenditure on the project. Identify costs for the testbed and funded trials separately. Explain how the costs have been calculated.
- Detail the spend profile by month, linking it to milestones and deliverables as needed. This should be fully consistent with the dates you have specified in the project plan.

- Describe what network and any other infrastructure will be used in the project (if any), and how it will be sourced.
- Describe any sub-contractor costs and why they are critical to the project and are not grant receiving consortium members.
- Confirm that the grant amount requested includes any irrecoverable VAT, all fees and charges, and appropriate allowance has been made for any price inflation during the project period.
- Confirm that all grant funding claims do not extend beyond 31 March 2022.

Assessors need to be confident the project can be delivered to the stated cost. They will consider:

- The response to this question and the supporting financial information provided.
- The suitability of the proposed costs - costs considered excessive will be a cause for serious concerns.
- The total amount of grant funding requested from DCMS.
- Whether there is an appropriate level of contributions from public sector organisations who are key project partners.
- Whether there is a significant contribution from any public sector organisation who is the lead project partner.

You may submit a single appendix up to 6 pages long as a PDF containing only tables, diagrams, headings and captions, to support your answer.

Question 10: How does financial support from DCMS and financial contributors add value? (7.5%)

- Detail how the funding you require will allow you to undertake the project in terms of time to market and any other relevant factors, where you would otherwise be unable to.
- Tell us whether the project could go ahead in any form without government funding, and if so, what difference would government funding make? Explain why this contribution would be beneficial to the project partners involved in the project, as well as the UK taxpayer (in terms of economic, social, environmental and other impacts) and how will you monitor the impact (baselining, monitoring and regular reporting of outcomes to DCMS will be a deliverable for this project).
- Describe any direct follow-on funding anticipated from project partners. This should include any post-project research and development, further trialling and capital spending commitments by the project partners.
- Describe any additional areas of added value not set out elsewhere in your proposal.

19.4. Other funding from public bodies

If you have included one or more entries in column 7 of the Finance Overview table (see the Application Form), please provide:

- The names of the bodies
- The name of the programme or scheme from which the funds are provided
- The fund amounts

20. Project Finance Forms

All proposal submissions require completion of Project Finance Forms. The Project Finance Forms provide details on the eligible project costs for each partner in the consortium. Project Finance Forms are required from each grant receiving partner for any submission, irrespective of grant value.

Each organisation in the project must provide a Project Finance Form using the template provided.

Logistics proposals should complete the Project Finance Form for each participant for the whole proposal term.

Manufacturing proposals should complete the Project Finance Form for each participant for the period up to the Project Development Review. They should also complete one Finance Summary Form for the whole proposal term.

Each Project Finance Form provides a detailed breakdown on each organisation's total eligible project costs. All total figures listed in the Finance Overview table must match those stated in the Project Finance Form.

The Eligible Project Costs Guidance contains detailed information on which project costs are eligible for funding and how to complete the Project Finance Forms.

21. Other 5GTT Programme projects

Over the past two years, the 5GTT Programme has funded and established several innovative testbeds and test networks throughout the UK. Details of these are available at gov.uk/5gtt. Some Case Studies from the other 5GTT Programme projects are published at UK5G.org under the Resources section.

5GTT funded testbeds will be usable by subsequent testbeds and trials. Consortia may wish to use the test network capabilities of those testbeds which will be made available by the project consortia. If so, they should discuss this directly with the project leads, including any costs for use. Contact details for the three universities and the project leads are available from Industrial 5GTT support.

Consortiums can also seek to access test network capabilities available elsewhere. These should be 5G or pre-5G test networks that allow the testing of some aspects of 5G capabilities.

22. Notices

This document is issued in text format to organisations wishing to make an application to the competition. Should you require access to this document in another format (e.g. Braille, large font or audio) please contact us. The easiest way to get in touch is by email, please contact us on industrial5gtt@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.

Bidders 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 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

Supporting Documentation

For information at competition stage:

[General guidance for Grant Applicants](#)

[Eligible Project Cost Guidance](#)

[Guidance for academics applying via the Je-S system](#)

[Draft Grant Funding Agreement - Manufacturing](#)

[Draft Grant Funding Agreement - Logistics](#)

[Benefits Monitoring template with Potential Monitoring Indicators](#)

[Programme Participation Agreement](#)

For completion at competition stage:

[Application form](#)

[Project Finance Form](#)

[Finance Summary Form \(Manufacturing\)](#)

Annex A

Overview of Industrial 5G Innovation Coordination, provided by Digital Catapult

What is the Industrial 5G Innovation Coordination Action?

Industrial 5G is a conceptual framework that encompasses the set of standards, best practice guides, and system integration approaches that facilitate the adoption of 5G in industrial environments.

To deliver the framework, Digital Catapult is undertaking two Coordination Actions:

1. Technical Coordination
2. Innovation Coordination

The Industrial 5G Framework, as part of Industrial 5G Testbeds & Trials (Industrial 5GTT) projects delivery, is a coordinated programme of activities enabling the creation of Industrial 5G demonstrations in a way that provides the additionality of projecting beyond the individual demonstrators and project outputs into the future connected industrial environments in a way that facilitates wider adoption, which will have a practical and positive impact on the products and services of the future. The Industrial 5G Innovation Coordination will be implemented across the testbeds and each consortium must consider, with direct support from Digital Catapult, how it will feed into this cross cutting initiative. The core aims of the Industrial 5G Innovation Coordination are:

- To create a more supportive environment for innovation via a collaborative approach within Industrial 5GTT which provides significant value to all involved.
- To ease connections with external innovation communities by creating shared mechanisms to engage with external organisations, which could be organisations such as universities, startups, scaleups or potential end-users of solutions developed on the testbeds.
- To improve the reach of messaging and the dissemination of learnings, and promotion of the initiative, as a programme rather than a set of individual projects.
- To ease reporting by establishing a shared set of programme wide success measures to inform project evaluation and to create continuity where possible in programme delivery
- To resolve innovation challenges quickly through sharing knowledge with respect to overcoming foreseen and unforeseen challenges which develop over the course of the projects (these could be technical, legal, social or otherwise)
- To increase access to innovation experience and to increase access to shared resources.

Why is Industrial 5G Coordination important?

Industrial 5G provides the conceptual focal point for the overall 5G Manufacturing and Logistics Testbeds and Trials output. The Industrial 5G Innovation Coordination will ensure that resources are used effectively across the projects and to reduce the time spent in resolving common challenges, including the scaling up of innovation activities, access to

skills and expertise as well as maximising visibility of what is happening on other programmes. Furthermore, Industrial 5G will increase the clarity in the value offered to industry as the Industrial 5G Programme will provide mechanisms for engagement as well as documenting the outputs of the innovation actions present across the entire Industrial 5GTT set of activities.

What is expected of the projects?

We will be required to nominate a lead Innovation Organisation that will be involved in the majority of Industrial 5G Innovation Coordination. Furthermore, an Innovation Champion nominated from each project will be expected to represent the project at required events and meetings and will contribute toward joint activities. The Innovation Champion does not need to be part of the lead Innovation Organisation; this is for the consortium to agree internally . The Innovation Champion should be given sufficient authority to influence the innovation agenda of all organisations in the consortium. It is advisable to have close links between the commercialisation, innovation and technical teams to ensure the success of the work.

Projects also need to consider, closely supported by Digital Catapult, how their activities will best feed into the collaborative nature of Industrial 5G and highlight clearly what benefits they expect to gain from participating in these collaborative activities.

We believe the strongest applications will be those who can find a natural process of feeding relevant information from project based actions into Industrial 5G activities. In establishing this common ground for sharing we believe that participants in the Industrial 5G forum will gain significantly in return for their contributions

What will consortia get out of the engagement?

1. Coordinated sharing of learnings and insights into the common challenges faced across the projects and where possible mechanisms to overcome them
2. Access to a private forum of innovation experts driving the 5G agenda on a national programme.
3. Expert feedback on proposed innovation approaches, access to shared innovation resources (people, documentation, approaches and other) and regular contact with the coordinating organisation(s).
4. Support in managing external relationships and engaging short term participants external to consortiums (University, startup, scaleup etc).
5. Access to best-in-class innovation knowledge in areas such as: user experience, product management, commercialisation strategies, new business models, future networks, cross technology (AI, IoT, Immersive).