



Questions and Answers Log

Industrial 5G Testbeds and Trials: Manufacturing and Logistics Competition

Introduction

The following questions and answers are in relation to the DCMS grant funding competition; **Industrial 5G Testbeds and Trials: Manufacturing and Logistics**. Please send further questions to industrial5g@culture.gov.uk, the answer to your question will be added to this document. All questions received by 30 August will receive a guaranteed response.

Subject: Industrial 5G Testbeds and Trials alignment with Made Smarter

Question: I see that the Manufacturing Made Smarter: Round 1 (Fast Start) competition is also open at Innovate UK and is targeting the use of industrial digital technologies to transform productivity in UK manufacturing. I am a UK based manufacturer, the scope of the competitions appears similar and I have a proposal that may/could use 5G connectivity to help improve productivity in a manufacturing business. Which competition should I apply to? Can I apply to both? If successful, can I combine grant funding from both competitions on one project?

Answer: We have worked closely with Innovate UK and the Department for Business, Energy and Industrial Strategy during the development of this competition to ensure our objectives are complimentary. The competitions have different scopes to reflect their differing objectives. So to ensure that you are addressing the correct competition scope for your proposal's ambitions please consider whether or not your proposed project is 5G enabled.

A 5G enabled project is one where the primary focus of the project is to explore 5G technology as an enabling technology, and the project objectives could not be achieved without 5G technology. All 5G enabled projects should address the DCMS Industrial 5G Testbeds and Trials competition. If however, the primary focus of the proposed project is industrial digitalisation, or something related, and 5G is a connectivity option but not crucial to the project objectives, you should consider first the Manufacturing Made Smarter Round 1 (Fast Start) scope. Please see [annex A](#) for the definition and explanation of a 5G enabled project when considering which competition scope to target.

Each application will be considered on merit for eligibility, scope and the scored application questions. The participation of consortium members in other government grant

funding competitions will not impact the consideration. Therefore, potential consortium participants may choose to apply to both Industrial 5G Testbeds and Trials and Manufacturing Made Smarter (Fast Start), or other government grant funding competitions.

The same applies to a 'combined' project, each application will be considered on merit for eligibility, scope and the scored application questions for this Industrial 5G competition. Your proposal's objectives must align with those of Industrial 5G Testbeds and Trials and the DCMS 5G Programme and your proposal must be self-contained, with specific objectives to be delivered with DCMS funding and capable of being delivered even if other public funding is not secured or is otherwise unavailable within the timeframe of these projects. Due consideration will be given to all structures, objectives and finance, including those utilising to some degree funding from other government grant sources.

Please note the information related to eligibility and scope provided in this answer refers only to the Industrial 5G Testbeds and Trials grant funding competition.

Subject: Leasing network infrastructure

Question: Is the leasing of 5G network infrastructure and eligible cost? The same way buying and building a 5G network is.

Answer: Yes. The procurement of 5G testbed network infrastructure to enable the trials a project intends to carry out, whether done through purchasing assets or leasing assets or access, is among the eligible costs for which projects partners can claim grant funding. We encourage projects to consider taking advantage of existing 5G testbeds where possible. Please refer to the Eligible Costs Guidance provided on the competition page for details.

Subject: Combining bids with the RCC programme

Question: We intend to bid into the Rural Connected Communities (RCC) Programme once that competition opens. If our RCC consortium includes private partners within the manufacturing and logistics sectors, would there be anything to stop us combining any RCC funding and grant secured by private partners through the Industrial 5G Testbeds & Trials to deploy 5G technologies in our area?

Answer: We do encourage sharing of lessons learnt, assets and expertise between 5G Testbeds and Trials projects. You can build on what is funded in any competition with subsequent funding (subject to state aid requirements) however, any funding received under a specific competition must be expended on the activities set out in the application for that competition.

Subject: Help on finding project partners

Question: If gov.uk has some form of "Virtual noticeboard" I would be grateful if you could take a virtual pin and put me on it.

Answer: In terms of building consortia, this competition, and all DCMS 5G Programme funding competitions are supported by UK5G, the national innovation network for 5G. I recommend you go to the UK5G website and use their "collaboration exchange" here. You can post about your company and what you are looking for, alternatively you can get in touch with UK5G and they may be able to point you in the right direction.

Subject: Maximum grant as a percentage of combined project cost

Question: Good afternoon, I wanted to clarify the funding % for the competition shown here please. I have found in the guidance document that the following funding limits apply: "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...universities: up to 80% of full economic costs, all other research organisations: up to 100% of eligible costs". In addition to these limits, is there a total funding limit for the project? Some competitions have a cap on the maximum grant as a % of the combined project cost."

Answer: The total grant funding available is the grant funding available per project, paid at a rate specific to each project partner, in line with the rates described in your question. There is no limit on the maximum project cost, only on the DCMS funding available to contribute to those eligible costs on a per partner basis.

The funding percentages provided are the maximum state aid and policy compliant amounts that DCMS can fund each partner type. This is not a target and partners may contribute a higher proportion.

We have no cap on the grant amount as a percentage of the total project cost, however, 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.

Subject: Eligible costs - capital assets

Question: A company that is planning to acquire factory assets from a manufacturing company. The acquiring company wants to use the factory as a 5G testbed. Could they consider this their contribution to project costs?

Answer: Under the eligible costs, organisations are eligible to claim for Capital Usage costs. Therefore, if capital assets (including any specifically purchased for the project) are utilised in delivery of the project, the depreciation (Capital Usage) costs are eligible. Residual value of assets purchased are not eligible, as this will be retained by the organisation and therefore not a cost incurred.

Subject: Manufacturing sector grant funding

Question: For the 5GTT grant, £3-4 million for manufacturing sector projects, what is the value of the matched fund?

How much does the lead business partner need to contribute to get £3-5 million grants?

Answer: We are making available £3-4 million per manufacturing project (we expect 4-6 manufacturing projects). The value of the matched funding, that is the amount contributed by the project partners that make up the consortium, depends on the make up of the consortium.

Project partners are expected to incur costs associated with carrying out the project and DCMS will then reimburse them for up to 60% of the costs. However, different sizes of business are eligible for different rates of reimbursement (60% for small businesses, 50% for medium sized businesses, and 40% for large ones - these are set by State Aid policy). And public sector organisations or academic institutions are eligible for larger reimbursements. So depending on the breakdown of the organisations involved in the consortium - as in whether the businesses are small, medium, or large, or public sector, etc - the proportion of total project funding expected of project partners will vary.

However, the DCMS 5G Testbeds and Trials Programme does expect a balance of 1:1 matched funding with project partners across the total of its investments, including Industrial 5G Testbeds and Trials, though we do maintain the flexibility to have different projects and types of business receiving different levels of grant funding within that. There is no cap on the total amount of grant funding as a percentage of the total project cost, as this is determined by the level of grant funding each individual partner is eligible for.

The amount of funding the lead business partner must contribute is not specified. It is for the consortium to agree among themselves, based on the activities they will carry out. The role of a lead partner is described in the Competition Guidance, it is not tied to how much funding they contribute.

The details of all this are available in section 7 of the Competition Guidance and in the supporting Eligible Costs Guidance and other documentation.

Subject: Research organisation funding

Question: On page 9 of the competition guidance, it states that research organisations 'undertaking non-economic activity' will be funded up to 80% for HEIs and 100% for other

research organisations. Can you please clarify what you mean by the 'undertaking non-economic activity'?

Also, with regards to HEI costs, can I also check my understanding on p12. that HEI's are only able to claim 30% of the total eligible project costs and that as with IUK calls, this would mean that the 30% of costs would need sharing amongst HEIs if more than one were involved in the project?

Answer: Guidance on the state aid from BEIS (formerly BIS) is available at the link below. A description of non-economic activities can be found on pg. 91.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/607691/bis-15-148-state-aid-manual-update.pdf

With regards to the second question, yes, this is correct. As set out in the General Guidance for Applicants: "a maximum of 30% of total eligible project costs are available to research participants [including HEIs]. If there is more than one research participant, this amount will be shared between them".

Subject: Logistics definition (healthcare logistics clarification)

Question: What is your definition of Logistics and associated processes?

Does healthcare logistics fall within your definition of logistics?

Answer: Logistics is defined as the management of the transportation of goods between the point of origin and the point of consumption. Our definition includes the transportation across different modes (land, water and air), the processing and storage and the delivery to customers, domestic and commercial. We do not wish to cover the logistics of transporting people, nor the impact of autonomous vehicles in the transportation of people as this work is already being explored through the work of the Centre for Connected and Autonomous Vehicles. We will consider autonomous vehicles in the context of the transportation of goods, freight etc. logistics hub operations and onsite robots.

So healthcare logistics, assuming it's the transportation of goods, would definitely fall within our definition of logistics. If healthcare logistics involved, say, the transportation of patients, that is a little more of a grey area, but I think we would consider it.

Subject: Collaboration funding and lead partner role

Question: Should the consortium factor in the % allocated to collaboration activities into their project costs? Can you clarify if this is in addition to the grant funding or a part of it? And if so, where in the application should these costs be included?

Could you clarify if the £3-4M is Grant costs or Total Project costs?

The Competition Guidance states that the “Lead Partner must request the grant”, can you clarify exactly what this means?

Answer: Each consortium is required to allocate between 2% and 4% of the DCMS grant funds to collaboration activities. This includes, but does not have to be limited to, participating in the cross-project coordination activities led by Digital Catapult i.e. you may choose to do some collaboration activities which are not coordinated by Digital Catapult and would count towards this total.

Between 2% and 4% of the grant funding from DCMS should be used for collaboration activities. Matched funding requirements will still apply as set out in the Competition Guidance.

The proposal should set out, along with the total amount of funding requested, how much of this funding (2-4%) will be allocated to collaboration activities and how this will be matched by consortium partners, in the same way as with the other project activity costs. Question 9 specifically asks you to identify the funding allocated to this activity. This should also be included the Project Finance Form in the appropriate tab (e.g. Labour for labour effort contributed) as with all other activities. This % of funding is not on top of the grant total and should be included in your proposal total.

The £3-4m is the amount of DCMS grant funding we intend to make available for each project in the manufacturing industry (for logistics, it's £5-10m). The total project costs will be higher, as they include the match funding required from project partners (e.g. double when based upon 1:1 matched funding). The 5G Programme aims to achieve 1:1 matched funding with project partners across all of its projects, however, different partners are eligible for different levels of grant funding within this and there is no cap on the percentage of the overall projects costs made up of DCMS grant funding.

Subject: Previous use cases in 5GTT

Question: Could you please tell me if any findings have been released from the six Phase 1 test cases and if so, where I can find this information?

Answer: The findings from the six Phase 1 projects trialling a variety of 5G use cases will be published by the projects themselves on uk5g.org. The findings will be available via the [Resources](#) section. Some of the projects have already published versions of their final report and the rest will be doing so over the coming months as the projects draw to a close. All the Phase 1 projects were extended from their original timeframes but for different lengths of time, hence why some are more advanced with findings than others.

I have included links below to the findings that are already available. Please keep an eye on uk5g.org/discover/resources for more findings from Phase 1 Projects.

[Liverpool 5G](#)
[5G Rural Integrated Testbed](#)

Subject: Academic partners on application form

Question: On the Application Form it states that PDF copy of latest accounts for each Partner must be submitted; I assume this is just for Industrials and does not include Academic

Answer: All organisations should provide their latest accounts. If accounts are not available, justification should be given.

Subject: Application number clarification

Question: In the General Guidance for Grant Applicants it states that appendices should include 'application number', how does one get that? If not is there a naming convention for documents?

Answer: DCMS generated application numbers are not being utilised for this competition. Please ensure that a suitable, consistent identifier, such as the project title, is included in the title of all appendices in place of the application number.

Subject: Access to available Use Cases for logistics.

Question: Is it possible to have copies of the use cases or a link to their location?

Answer: The 5G Testbeds and Trials Programme has not previously granted funding a 5G testbed project featuring logistics use cases. However, some examples of potential logistics use cases can be found in the Sectors Analysis Report by Digital Catapult, on page 61, which you may find helpful. The report, found here on GOV.UK, also contains an analysis of the state of digitalisation on the industry and the opportunities available.

Subject: Previous challenges to existing 5GTT projects

Question: Can we have access to list with the challenges existing 5GTT projects have encountered?

Answer: The findings from the existing Use Case Trials projects will be published on UK5G.org, the ecosystem's national innovation network. The findings reports will be published to uk5g.org/discover/research. Some of the projects have already started to publish their findings, such as 5G Rural Integrated Testbed and Liverpool 5G. The partners from our projects mostly have their details on the UK5G website if you wanted to follow up with them and UK5G can help facilitate contacting them, please let us know if that would be helpful. UK5G also advertises the open days/showcase events in the Attend section and you can sign up to attend (e.g. 5GRIT on 25th Sept).

Subject: Access to the body of work already available

Question: Access to the body of work already available (mentioned in Section 4.1 page 4 of competition guidance and overview). Possible requirements from industrial sectors for 5G, an example made is 'made in 5G' by Digital Catapult.
Help to co-test/co-trial technical solutions. Are examples of test cases available?

Answer: Section 4.1, Building Consensus Around 5G in Industrial Environments, is providing detail for one of the challenges projects are expected to address. These are challenges that we have identified and believe solving them will provide significant benefits to the 5G ecosystem. Proposals should demonstrate that they have considered these challenges but it is not intended to be an exhaustive list, you may wish to identify other challenges you believe are important to the adoption of 5G in industry and explain how you intend to address them.

The particular challenge in 4.1 includes in the details that proposals should build on the existing body of work and suggests Made in 5G by Digital Catapult. I would also encourage you to consider the Made Smarter Review for the wider context of industrial digitalisation.

Section 4.1 also includes that proposals should demonstrate how they will test and trial solutions to this challenge. The existing body of work, including Made in 5G and the Made Smarter Review, will have some examples of these tests and trials and we encourage all applicants to explore the sector(s) they're interested in order to understand current solutions if they exist. I cannot name particular cases of tests and trials.

Subject: List of digital services supply chains

Question: Different digital services supply chains. Does a list already exist? And may I have a copy?

Answer: This passage in 4.1 refers to the difference between the digital service supply chains that exist in the manufacturing and logistics vertical sectors compared to the mobile/telecom industry. From the research conducted by Digital Catapult (available in the 5G Sectors Analysis Report) there appears to be a stark contrast in the way the vertical sectors are accustomed to procuring a suite of digital services from system integrators and mobile/telecoms firms that are accustomed to selling subscriptions to their existing networks to businesses. This can act as a language and cultural barrier when it comes to 5G where different services like private networks or network slicing are a possibility. We do not have a list of digital service supply chains but more background to the research is available in the 5G Sectors Analysis Report and Digital Catapult will be happy to discuss further detail if that would be helpful.

Subject: Access to Made Smarter Industrial 4.0 Accelerator Initiatives. Who can provide information on how to gain access?

Question: Who can provide information on how to gain access?

Answer: The Made Smarter Industry 4.0 Initiative is government backed programme following on from the Made Smarter Review that is designed to help improve the UK's productivity and competitiveness through industry 4.0 digitalisation. More information can be found at madesmarter.uk and review is available at GOV.UK. Opportunities for Made Smarter grant funding will be made available through Innovate UK. We coordinate closely with Made Smarter and will continue to work together to ensure government is providing the best support across sectors, technologies and use cases. Details of how to work with both Industrial 5G Testbeds and Trials and Made Smarter can be found in Q1 of this Q&A document.

Subject: SME participation

Question: If large number of SMEs are invited to participate at the beginning of the project i.e. they are key collaboration consortium partners. Can the project's open call after 12 - 18 months in to the project invites additional SMEs as subcontractors? Or, are they expected to be invited as key project partners?
Are SME service providers acceptable as participants to join project?

Answer: Manufacturing projects will be required to present an updated project plan at the Project Development Review. This must include plans to bring in additional project partners (not subcontractors), particularly SMEs, into the project through an open call. As part of the revised plan, projects may also propose new subcontractors and project partners necessary to deliver their revised plan. As with all subcontractors, a clear case must be made as to why subcontractors are not key project partners and their work could not be delivered by one.

Logistics projects are also required to run an open call to bring in additional project partners (not subcontractors), particularly SMEs, into the project. Logistics projects will not be subject to a Project Development Review and are not expected to submit revised plans. If a specific need is identified for a new subcontractor during the project term, then this would be considered through the normal change control process, however, this DCMS don't expect this to occur.

Subject: Participation in multiple bids

Question: Is it ok to be part of more than one bid and proceed with more than one testbeds and trials project if multiple are successful?

Answer: Yes, organisations may be party to more than one proposal and similarly to

more than one project, if multiple of those proposals are successful. In the event that the same organisation is party to multiple shortlisted proposals, DCMS will need to be given confidence that the organisation has the capacity and capability to deliver multiple commitments.

Subject: International companies involvement in bids

Question: Can International companies (not having a footprint in the UK) be a Key Project Partner and are their costs eligible project costs?

Answer: Only UK based organisations are eligible to receive grant funding. Non-UK organisations may be Project Partners or Project Participants, who are not eligible to receive grant funding.

Further details of eligible costs as part of the project funding can be found in the Eligible Project Costs Guidance document on the competition page.

Subject: Licensed spectrum slice (unique small slice for inside manufacturing facility) for private in-factory network for robust flexibility

Question: Who will licence and manage this spectrum slice from Ofcom for the proposed testbed, and potential future roll-out ?

Answer: The answer is that is the project consortium's responsibility to obtain the spectrum licenses, if necessary. Applications for the license are made to Ofcom. Details of what is expected in the initial application for grant funding are in the Competition Guidance at the following locations;

Challenges to Industrial 5G - Page 5 - paras 4.3 & 4.4

Common Scope Elements - Page 11 - section 8

Question 8 - Page 27

Subject: Extension of the competition

Question: Have you considered to extend the bid date from the 10th of October to later date (for example an extension of 1 month)?

If yes, what is the new date?

Answer: The Industrial 5G competition will close at 12pm (midday) on 10th Oct 2019. We

are not able to accept any proposals that have not provided all of the required materials specified in the Application Guidance in advance of this deadline.

We recognise that the competition period may not allow for all parties in a consortium to secure full formal approval from their internal governance processes. We will accept bids noting that such approvals are pending. Where this is the case, this should be identified in applications and these approvals must be granted and confirmed to DCMS prior to the interview stage (taking place from 28th October to 1th November)

Subject: Waiting on board approval for costings

Question: A parter has struggled to have their board's approval for costings before the deadline. However they are looking to provide an estimated number. Can you please advice on how this can work?

Answer: We recognise that the competition period may not allow for all parties in a consortium to secure full formal approval from their internal governance processes. We will accept bids noting that such approvals are pending. Where this is the case, this should be identified in applications and these approvals must be granted and confirmed to DCMS prior to the interview stage (taking place from 28th October to 1th November)

Subject: Subscription models

Question: Are the subscription based costing models fall under the eligible costs?

Answer: Where subscription costs are 3rd party sub-contractor costs, these may be claimed as such. Why this delivers best value for money should be made clear. Where project partners typically utilise a subscription model in commercial operations, grant claims should nonetheless be made for eligible costs, not charge out rates. Costs will only be eligible if they:

- a) are incurred within the Grant Funding Period; and
- b) are net of VAT recoverable from HM Revenue and Customs and gross of irrecoverable VAT; and
- c) are directly attributable to the delivery of the Project for the Purpose; and
- d) are incurred by or Distributed to UK-based organisations (non-UK organisations may be Project Participants but cannot receive Distributions of Grant Funding); and
- e) are capable of being capitalised and/or treated as capital expenditure in line with the Consolidated Budgeting Guidance.

Further details of eligible costs can be found in the Eligible Project Costs Guidance

document on the competition page.

Subject: Submitting finance details privately

Question: When submitting to Innovate UK, we use the portal which allows each partner to keep their finance details (e.g. charge rate) private, how will this work if we are submitting to an email address rather than through a portal?

Answer: If this is a specific issue during submission, then the partner in question who does not wish to share this information at competition stage with the lead partner may send it directly to DCMS, clearly identifying which proposal it is part of. The lead partner should include the headline figures in their Project Finance Form Summary tab nonetheless. During contract delivery, lead partners will be expected to fulfil their responsibilities of managing grant claims, therefore will be responsible for handling detailed financial information for claims if selected as a funded project.

Subject: Eligible costs for equipment

Question: We are looking to purchase network core installations and compute platforms. Is this equipment considered eligible costs? Can these costs be claimed at 100% or does it have to be at the percentage allowed for the organisation hosting the equipment?

Answer: Equipment costs can be eligible costs. If claiming for material costs, the cost claimed should be net of any residual or resale value at the end of the project. Alternatively, if claiming capital depreciation costs for the equipment, then the capital depreciation should be calculated in line with the Eligible Project Costs guidance.

Grant funding can be claimed against eligible costs up to the maximum percentage allowed, set out in the Eligible Project Costs guidance. If the organisation is a research (non-university) or public sector organisation, then they can claim at 100%. If they are another type of organisation, they may claim up to the allowed percentage.

The party claiming for the equipment should be the party that has incurred the cost (purchased the equipment or incurred the capital depreciation), not necessarily the party which physically 'hosts' the equipment (though they may be the same organisation in practice).

If the organisation providing the equipment is a project partner (i.e. is receiving grant funding rather than selling the equipment to a consortium member), then they should claim grant funding as appropriate.

Subject: Contributing in-kind support

Question: Can the SMEs introduced at the Open Call stage contribute in-kind to support the piloting?

Answer: Project partners can make contributions in-kind to the project, this is considered part of the value-for-money proposition of the project, but these contributions in-kind are not considered eligible costs for which partners can claim grant funding. This applies to all project partners (including SMEs, whenever they join the consortium). Any eligible costs incurred by project partners in the project, such as labour or capital depreciation could be claimed against for grant funding to the appropriate percentage. There is no restriction on the size of their costs, so an SME incurring eligible costs (no matter how small) could claim grant funding to cover 50% or 60% of their costs, as appropriate depending on whether they are medium or small.

Subject: Signing up SMEs during the project

Question: Do the SMEs engaged at the open call stage have to be identified at the current Industrial 5G competition submission stage? Or can one or several of the consortium partners commit to signing up engagement from the SMEs during the project?

Answer: The organisations (which may be SMEs) which are engaged during the open call do not have to be engaged at this initial stage. The intention of the open call is to engage new partners, beyond those part of the initial consortium. You must have at least 1 SME as part of your consortium from the beginning to be eligible to be selected. There is no requirement to have more than that at this stage. If you already have a plan to add more SMEs at the open call stage, you should include in your proposal and be prepared to discuss at interview should you be shortlisted.

Subject: Requirements for 5G access

Question: Do all the industrial partners need to have 5G access to benefit from the project and qualify as in-kind partners? Or is it ok not to be in 5G enabled area as long as the SMEs benefit from the technology and data generated whilst contributing to the 5G knowledge base?

Answer: A project partner does not have to have 5G access to be part of the project. Their value to the project might be in supplying expertise and equipment for example, or in an administrative function as long as their value to the project can be demonstrated. This goes for all project partners, regardless of size.

Subject: Capital investment in infrastructure

Question: Are there any constraints on post-project ownership? i.e. businesses/academia/RTOs? Is there freedom on where the open access infrastructure is installed?

Answer: There are no constraints imposed by DCMS on ownership of the project assets post project. Proposals should demonstrate how commercial sustainable outputs will be developed. This may include ownership by a range of bodies and why the proposed bodies are best placed to do so should be explained.

Subject: Focus on 5G

Question: Degree of development of 5G and software (e.g. apps) technology expected vs focus on design and implementation of required infrastructure and digital manufacturing use cases.

Answer: This is up to projects to decide on the balance. DCMS's aims for the projects are set out in the Competition Overview - in short, DCMS aims for these projects to help build the business case for 5G adoption in industry by helping solve some of the challenges to adoption in real world industrial settings. This includes both advancing the technology and designing and implementing infrastructure, the case for focusing on any particular aspect is up to the project. It may also be relevant to note section 9 (pg12) of the Competition Guidance which describes how projects should identify the manufacturing process they are targeting (if submitting a manufacturing proposal).

Subject: Use of RTO facilities

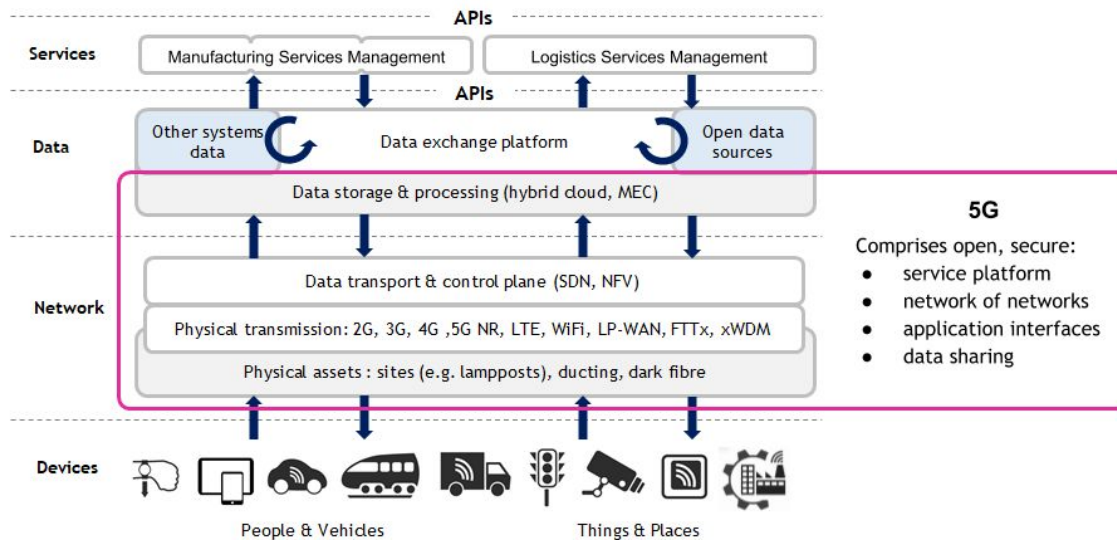
Question: Would it be ok to implement initial prototypes in RTO facilities?

Answer: DCMS imposes no restrictions on the facilities in which prototypes are implemented. However, you should be prepared to justify these decisions, and others, to consistently demonstrate you have a plan for delivery and sustainability.

Annex A: Extended definition of 5G Enabled / *what are 5G capabilities?*

A 5G enabled bid means it includes infrastructure for industrial use cases comprising an open, secure service platform, a ‘network of networks’, corresponding application interfaces (APIs) and data sharing platform.

5G capabilities refers to the New Radio interface (known as 5G NR), other wireless media such as IEEE 802.11ax, and also the core and the distributed computing platform running on top of it. This is illustrated in the diagram below.



The ‘network of networks’ refers to the way that 5G can bind together, manage and orchestrate multiple existing and future networks using current advanced LTE (4G) networks, WiFi, fixed networks and other systems based on international standards. Key **5G capabilities** include:

- software defined networks (SDNs);
- network function virtualization (NFV);
- multi-access/mobile edge computing (MEC)

which together enable the mobility of Virtual Network Functions (VNFs).

For a project to be classified as **5G enabled**, it is sufficient to utilise the key 5G core infrastructure elements referenced above, whether or not it utilises 5G NR radio access technologies. This classification remains pertinent particularly when the technology roadmap includes evolution to 5G.