



Support for business case development for 5G Private Cellular Networks

Service Definition

A G-Cloud 15 service from Real Wireless

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Document control

Item	Description
Source	Real Wireless
Client	G-Cloud 15
Report title	Support for business case development for 5G Private Cellular Networks
Sub title	Service Definition
Issue date	January 2026
Document status	Issued version 1.0

About Real Wireless

Real Wireless is the world's leading independent wireless advisory firm. Its network of experts includes engineers, physicists, economists, security advisors, business strategists and deployment specialists. Real Wireless clients benefit from a comprehensive portfolio of specialists and custom tools that analyse radio network performance, techno-economic impact and the business model implications of wireless systems. With this unmatched resource Real Wireless is able to advise the industry and all user groups, spanning businesses to governments, mobile operators, regulators and technology companies on every aspect of wireless technology.

Real Wireless has applied this unique range of technical and strategic expertise to some of the UK's biggest wireless infrastructure projects – from major stadium connectivity to shopping malls to transport systems — and has worked with operators, vendors and regulators on all forms of wireless connectivity. It has also advised governments and the European Union on the technical, social and economic implications of communications policy.

Real Wireless experts help clients to understand, select and deploy technology according to need; we deliver truly independent advice as we are not affiliated with any association, company or proprietary standard. That is why, with 5G now being deployed, Real Wireless is best placed to guide and advise businesses on the choices and opportunities next generation communications systems will bring.

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Abbreviation	Definition
2G	Second-generation mobile telephone system (or GSM)
3G	Third-generation mobile telephone system (or UMTS)
4G	Fourth-generation mobile telephone system (or LTE)
5G	Fifth-generation mobile telephone system
MNOs	Mobile Network Operators
RND	Radio Network Dimensioning

1 About the Service

The Real Wireless ***Support for business case development for 5G Private Cellular Networks*** service provides strategic guidance, advice and develops a business case to support the deployment of a 5G Private Cellular Network.

1.1 Approach

We will work with the relevant departments in your organisation and other stakeholders as appropriate. These departments could include: IT services, operations, finance, building services, site services, estate management and others as required.

We will work with your team to develop the key use cases that need to be supported over the next say 5 years and use these to identify the 5G Private Cellular Network service requirements necessary to support these use cases and the benefits they deliver. As appropriate we would hold one or more workshops to elicit details regarding use cases, work processes to be supported and priorities. Service requirements would include coverage taking note of in building(s) and external coverage, throughput, any latency requirements, operational management of the network, likely number of connected devices and any specifics related to cloud services.

From this analysis we will then develop the options for deployment of a 5G Private cellular Network to support these use cases. These options will look at where the antennas and radio units could be located and how many would need to be deployed to achieve the coverage and throughput requirements, the connection arrangements for the various Private Cellular Network components and how this connectivity will be achieved – e.g. fibre, Ethernet or wireless. We will identify any trade offs across the various options and present our findings to identify the two most suitable options which will then be taken through to be costed.

We will develop the costs for the two options based on our database of 5G private network costs plus any costs determined by the site and buildings. As appropriate we will work with your buildings team to develop high level costs for specific site requirements such as cross site connectivity and the availability of existing spare fibre or ducts that could be used for new fibre deployment. Costs will be presented as capex and opex and based on a number of to be agreed assumptions e.g. how will the network be managed on a day to day basis for say fault identification or adding new users and their devices on to the network. Such management could be undertaken by the IT department or could be handled remotely by the system installer/system integrator or cloud services provider.

Alongside the deployment costing activities we will work with the potential users of the 5G Private Cellular Network to start to identify and quantify the savings and other benefits that could be realised through the deployment of such as network. As part of this analysis we will identify the risks that could prevent the expected benefits realisation and how these could be mitigated. Typically the quantification of benefits into monetary savings will be covered as a range of values and where appropriate we will identify the drivers that lead to this range.

Using the information and data developed update we will put together a business case supporting the deployment of a 5G Private Cellular Network including identification of the NPV of costs and savings to identify the overall Return on Investment (RoI) achievable with the deployment of such a network. If the business case does not provide an acceptable RoI and/or has significant risk to the achieve of this RoI or other significant risks we will identify potential options to bring the RoI to an acceptable level and how to mitigate the identified risks.

In addition to the standard business case as identified above we have an option to develop a Green Book business case based on HM Treasury guidelines and typically used where public funds are being spent such as by a local authority. Our Green Book Business Case to support deployment of a 5G Private Cellular Network would follow the five case model:

- **Strategic dimension** – the case for change and intervention
- **Economic dimension** – net value to society/social value of the intervention compared to Business as Usual
- **Commercial dimension** – what is the commercial deal and what are the risks
- **Financial dimension** – impact on public sector budget both capital and revenue
- **Management dimension** – realistic and robust delivery plans

1.2 Deliverables

The standard business case will deliver a commercial style business case word document and a presentation from the Real Wireless team, this would be suitable for enterprise use, something for internal use that could be presented to a board or the relevant decision makers.

The Green Book business case would meet the Green Book structure and guidance given by HM Treasury and the Government Finance Function.

1.3 Project management

Real Wireless controls all assignments in the same structured, robust manner. Project delivery is in line with our ISO 9001:2015 certification which ensures consistency throughout our process from specification of requirements to ultimate delivery on projects of any size and scope.

We will allocate a Project Manager to the call-off who will be responsible for project deliverables and managing the project (including kick-off, progress meetings and peer reviewing deliverables together with tracking project risks, issues, actions and decisions). The Project Manager will be the primary day-to-day point of contact for the Buyer and will monitor satisfaction with our delivery, conduct and outputs.

1.3.1 Project timescales

Following receipt of your instruction to proceed with a project a kick-off meeting will be arranged to review the requirements and scope of the project in full.

Typically the standard business case to support deployment of a 5G Private cellular Network would take around 4 months.

The Green Book structured business case to support deployment of a 5G Private cellular Network would take around 7 months.

2 About Real Wireless

Real Wireless is an expert on radio and wireless technologies including full-spectrum wireless: mobile, Wi-Fi, broadcast, satellite, radio propagation, business radio and more. Our total focus on the sector enables us to provide the practical and strategic advice required by our clients.

2.1 Our people

Our network of experts includes more than 40 engineers, physicists, economists, security advisors, business strategists and deployment specialists. Within our network we have senior-level and academic expertise

and a wealth of experience in technical and commercial domains, from operator, regulator, vendor and systems integrator. Bridging the gap between the mobile communications industry and users means we can help the industry better understand and meet the needs of its customers and help users get the best from their mobile technologies to benefit business.

2.2 Proprietary tools

Real Wireless clients benefit from a comprehensive portfolio of specialist and custom tools that analyse radio network performance, techno-economic impact and the business model implications of wireless systems. They enable optimisation encompassing coverage, capacity and co-existence and can utilise data from live networks.

These tools can be applied to the investigation of urban, suburban and rural areas, 4G and 5G coverage and network performance, interference assessment, optimum site location, interference between indoor and outdoor systems, throughput variation within buildings, localised demand, and network dimensioning.

These tools are further extended with recognised models of viable revenue growth to enable the evaluation of business models. When combined with demand forecast tools, we establish a basis for significant strategic insight.

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