



4G and 5G Smart City Connectivity

Service Definition

A G-Cloud 15 service from Real Wireless

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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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Contents

1 About the Service 2

1.1 Approach2

1.2 Deliverables.....2

 1.2.1 Workshops2

 1.2.2 Reports.....2

 1.2.3 Project management2

 1.2.4 Project timescales.....3

2 About Real Wireless..... 3

2.1 Our people.....3

2.2 Proprietary tools3

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 **4G and 5G Smart City Connectivity** service provides guidance and a structure for city and local authorities to accelerate the deployment of 4G and 5G services to support Smart City use cases. Such services focussed around the Smart City narrative can deliver economic benefits to the city, its suppliers and its citizens.

1.1 Approach

We will work with the relevant departments in the city or local authority. These departments could include: planning, digital infrastructure provision, digital services provision, maintenance of the built environment, IT services and other stakeholders such as asset maintainers, lighting contractors, cloud service providers and others.

We will review the existing processes and suggest how these could be revised to accelerate access to city assets. We will also explain to the groups included in the project what 5G is, how it differs from 4G and the implications of these differences with regard to infrastructure deployment. We will also examine the impact of the Electronic Communication Code legislation.

We will show the various business models that can be used for 4G and 5G services and in particular how neutral hosts and the provision of private 4G/5G networks could bring benefits when compared to the alternatives.

We will also review the city assets and highlight those that are likely to be more attractive to mobile operators, neutral hosts and private network operators.

1.2 Deliverables

1.2.1 Workshops

We will undertake a number of workshops with various departments within the city/local authority. These workshops will be used to deliver the core aspects of this work around the comparison of 4G and 5G, how to speed up the work processes and how the work processes might need to change to accelerate Smart City wireless connectivity. We will provide the slides used in these workshops and the notes written up following each workshop.

1.2.2 Reports

At the end of the project we will provide a report and present the overall conclusions and outcomes. This report would include a number of different areas of analysis e.g. prioritised list of 4G/5G use cases, assessment of available street assets, business model options and a high level assessment of public versus private network deployment.

1.2.3 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.

1.2.4 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. A project is typically delivered within twelve to sixteen weeks from the kick-off meeting.

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 for 4G and 5G coverage and network performance, interference assessment, antenna 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 can establish a basis for significant strategic insight.

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