

DERRY CITY AND STRABANE DISTRICT COUNCIL

LOCAL DEVELOPMENT PLAN (LDP) 2032



POLICY REVIEW 10 **Planning Policy Statement 10 - Telecommunications**

(May 2017)

This Document is one in a series, which builds up to form the 'evidence base' that informs the preparation of the Local Development Plan (LDP).

The afore-mentioned evidence base will be continually updated, to additionally include the latest information, input from public engagement, statutory consultees, stakeholder groups, Sustainability Appraisal and from other Departments within the Council, including Community Planning.

The Evidence Base is published as a 'supporting document' in accordance with Article 10(a) and 15(a) of the Planning (LDP) Regulations (NI) 2015



Telecommunications

Purpose: To consider existing planning policies relating to PPS 10 – Telecommunications and to consider alternative policies; which will inform the forthcoming Preferred Options Paper (POP), as part of the preparation of the Local Development Plan (LDP).

Content: The paper will provide information on:

- (i) The Context of Telecommunications within Derry City and Strabane District and existing plan policies;
- (ii) Derry City and Strabane District Council (DCSDC) objectives for Telecommunications and the linkages between DCSDC objectives, Regional Planning Policy and Strategic Planning Policy objectives;
- (iii) Consider existing policies and consider preferred/alternative policy options within the Local Development Plan (LDP).

Recommendation: The findings shall be used to inform the Preferred Options Paper (POP) and strategic policies in the Local Development Plan (LDP).

1.0 Introduction to Paper

- 1.1 The purpose of this paper is to consider current planning policies associated with Telecommunications and to determine whether or not they are compatible with the Council's objectives and whether they need to be amended to take account of local circumstances through the new Local Development Plan (LDP).
- 1.2 This paper provides an assessment of how existing planning policies take account of the Regional Development Strategy (RDS), Strategic Planning Policy Statement (SPPS), Sustainability Appraisal themes and DCSDC objectives through the proposed LDP objectives.
- 1.3 Modern telecommunications are an essential and beneficial element of everyday living for the people of and visitors to this region. It is important to continue to support investment in high quality communications infrastructure which plays a vital role in our social and economic well-being. The importance of other strategic infrastructure to the region such as transport (including air and sea ports), energy and water is also recognised by Government.

Legislative Context

- 1.5 Article 5 of the Planning Act (Northern Ireland) 2011 states that the creation of planning policy as part of the Plan Strategy must be done with the objective of furthering sustainable development and in doing so, must take account of policies and guidance issued by OFMDFM, DOE and DRD such as the Regional Development Strategy (RDS) 2035 and Strategic Planning Policy Statement (SPPS).
- 1.6 Section 25 of the Northern Ireland (Miscellaneous Provisions) Act 2006 requires all NI Departments and District Councils in exercising their functions, to act in a way they consider to be best calculated to contribute to the achievement of sustainable development.
- 1.7 The new duty of **Community Planning** introduced in April 2015 requires the Council to lead the process of creating a long term vision for the social, environmental and economic well-being of the area and its citizens. The Local Government Bill introduces a statutory link between the resultant Community Plan and the Council's Local Development Plan (LDP), in that the LDP must take account of the Community Plan in its preparation. Therefore it provides the key context at the local Council level for the preparation of the LDP.

- 1.8 It is intended that the LDP will be the spatial reflection of the Community Plan and that the two should work in tandem towards the same vision for the District and its communities and set the long term social, economic and environmental objectives for an area. In practice, it is expected that the Community Plan will set higher level objectives to provide adequate and appropriate housing for its people – which the LDP will then help to deliver, spatially.

National Obligations

- 1.11 The regulation of Telecommunications is carried out through the Electronic communications code ('the Code'). The Code regulates the relationship between electronic communications network operators (known as 'Code operators') and site providers. It provides the legal framework for the rollout and maintenance of the physical networks of apparatus that support the provision of electronic communications services throughout the United Kingdom. In relation to Northern Ireland, telecommunications is a reserved matter under paragraph 29 of Schedule 3 to the Northern Ireland Act 1998.
- 1.12 The Executive recognises the need for a modern efficient telecommunication infrastructure. The draft Telecommunications Action Plan (2011-2015) aimed to ensure that a comprehensive range of next generation telecommunications services and data rich applications are made as widely available as possible across the region. The most common way of delivering both voice and broadband is via copper lines, often suspended overhead using wooden poles. However, these are increasingly being delivered using alternative technologies including fibre optics, cable and wireless (including mobile). Installing new ducts and cables in the ground is expensive. Incorporating telecommunications ducts with publicly funded infrastructure projects has been used very successfully in Europe.

2.0 Planning Policy Statement (PPS) Review Parameters

- 2.1 In preparing the new LDP, the Council will have regard to several existing plans and documents that set out the main legal and policy context and considerations of what the LDP is required to do and can include, in relation to telecommunications in the District.
- 2.2 **The Regional Development Strategy 2035 (RDS, launched 2012).** The RDS is the spatial strategy of the NI Executive, expected to deliver the spatial aspects of the Programme for Government. It emphasises the significant role that Derry has to play as the principal city of an expanding North West region and the importance of Strabane town as Derry's clustered Main Hub. In preparing the Local Development Plan, the Council must 'take account' of the RDS.
- 2.3 Northern Ireland's core telecommunications network is recognised as world class with high quality communications infrastructure considered essential for sustainable economic growth. This is affirmed by the Executive and DRD's RDS which identify the need for a modern efficient telecommunications infrastructure that will give Northern Ireland a competitive advantage.
- 2.4 The RDS also sets out 8 main aims for the region which includes strengthening Derry as the principal city of the North West, improving connectivity to enhance the movement of energy and information between people and taking steps to take action to reduce our carbon footprint and facilitate adaptation to climate change. Management and delivery of our public services and utilities will be key to delivering aspects of these aims.
- 2.5 The RDS 2035 envisages that next generation broadband services will be available to provide support for 85% of businesses.
- 2.6 Spatial Framework Guidance (SFG) 14 of the RDS 2035 also recognises that rural areas can be disadvantaged by their remote location in terms of access to the essential services. Further innovations and advancement upon the existing rural telecommunication infrastructure will work to lessen this disadvantage.
- 2.7 **The Strategic Planning Policy Statement for Northern Ireland (SPPS).** The aim of the SPPS is to facilitate the development of telecommunications infrastructure in an efficient and effective manner whilst keeping the environmental impact to a minimum.
- 2.8 The SPPS sets out regional strategic objectives and regional strategic policy for telecommunications which must be taken into account in the preparation of the PS and LPP. A council should bring forward policies and proposals to set out the detailed criteria for consideration of new telecommunications development in their

local area which should address important planning considerations such as: siting, design, and impact upon visual amenity.

- 2.9 The process of SA should help to ensure that a council's approach towards telecommunications is the most sustainable in light of the reasonable alternatives considered. This should help to justify the policy approach set out in the PS which will set the framework for the more detailed assessment of proposals for telecommunications.
- 2.10 **Strategic Growth Plan – our Community Plan.** The Draft Community Plan states that to realise the full benefits of a regional status, the region needs to maximise its strengths for communication, transport, tourism, economic productivity, knowledge, education and innovation.
- 2.12 **Derry City & Strabane District Council Corporate Plan and Performance Improvement Plan 2016/17.** One of the objectives of the Corporate Plan and Performance Improvement Plan is grow our business and facilitate cultural development.

3.0 Existing Policy

- 3.1 The existing **Derry Area Plan 2011** has one policy in relation to telecommunications development. Policy PU 3 Telecommunications Development states that Telecommunications apparatus which requires planning permission will normally be permitted provided it does not detract from the natural or man-made environment or the character of its setting.
- 3.2 The **Strabane Area Plan 2001** does not have a specific policy on telecommunications however nature and countryside conservation does apply and particular attention is given to the protection of this areas visual amenity and landscape character which would apply in the consideration of telecommunications applications.
- 3.3 The Strategic Growth Plan (our District's community plan is to be published in May 2017, with higher level strategic policies, as well as incorporating exiting strategies/proposals for the District. Relevant themes in the Community Plan are 'Enterprise and Economy', 'Physical & Environmental Regeneration' and 'Infrastructure'.
- 3.4 The new style of LDP provides a unique opportunity for the Council to genuinely shape the district for local communities and will enable them to adopt a joined up approach, incorporating linkages to other functions such as regeneration, local economic development and community planning. The Local Government Act introduces a statutory link between the Community Plan (CP) and the LDP, in that the preparation of the LDP must 'take account of' the CP – which provides the higher-level strategic aspirations for economic development in the district. It is intended that the LDP will be the spatial reflection of the CP and that the two should work in tandem towards the same vision for the Council area and our communities and set the long term social, economic and environmental objectives for the district.
- 3.5 **The One Plan** (Ilex 2012) sets out a number of Transformational Themes that cover key areas for the regeneration of Derry and its surrounding area.
- 3.6 Theme 1: Growing the Digital Economy centres on Derry's status as the Digital City on the island of Ireland. The key areas identified relating to telecommunications infrastructure are as follows:

- exploitation of Project Kelvin
 - maximize use of Broadband Infrastructure
 - need to make the latest superfast broadband infrastructure available to all.
 - creation of cross border information hubs
 - creating the environment where we can fully capitalise on the unique digital position of the City.
 - maximising the BT investment of £3.75m which will lead to the City being the first Digital City on the island of Ireland and one of the first in the UK to be 100% super-fast broadband.
- 3.7 Theme 1 set out a number of key outcomes which are relevant to telecommunications infrastructure. It sought to have 100% super-fast broadband across the City by October 2011 and to create additional infrastructure with Data Centre development and associated cross border power supply led by the private sector. An OFCOM report in June 2014 reported there was 99.99% access to super-fast broadband by 2013.
- 3.8 Theme 5: Sustainable and Connected City Region has approaches including sustainability in Energy and Built Environment and Carbon Neutral Development – an approach to regeneration that ensures that all new builds make use of sustainable materials, are energy efficient and use renewable sources of energy. The plan also promotes renewable and sustainable technologies for farmers and rural businesses.
- 3.9 **Planning Policy Statement, PPS 10 ‘Telecommunications’**; PPS 10 sets out the Department's planning policies for telecommunications development. It embodies the Government's commitment to facilitate the growth of new and existing telecommunications systems whilst keeping the environmental impact to a minimum. It also addresses health issues associated with telecommunications development.
- 3.10 The primary aim of this PPS to ensure that new telecommunications infrastructure, such as masts, antennas and associated equipment can be developed in a way which continues to provide Northern Ireland with world class telecommunications services, while at the same time minimising the environmental impact of new or replacement equipment.
- 3.11 The main objectives of PPS10 are: to facilitate the continuing development of telecommunications infrastructure in an efficient and effective manner; ensure that where appropriate new telecommunications development is accommodated by mast and site sharing; ensure that the visual and environmental impact of telecommunications development is kept to a minimum; minimise, as far as practicable, undue interference that may be caused to terrestrial television broadcasting services by new development; and encourage appropriate provision

for telecommunications systems in the design of other forms of development. There are 2 policies contained within PPS10:

1. TEL 1 Control of Telecommunications Development
2. TEL 2 Development and Interference with Television Broadcasting Services

- 3.12 Policy TEL1 states that development proposals for telecommunications development, together with any necessary enabling works, will not result in unacceptable damage to visual amenity or harm to environmentally sensitive features or location. Developers will therefore be required to demonstrate that proposals for telecommunications development, having regard to technical and operational constraints, have been sited and designed to minimise visual and environmental impact.
- 3.13 TEL1 also requires applicants to consider the sharing of an existing mast or other structure. A new mast will be considered if it represents a better environmental solution than other options.
- 3.14 TEL1 contains specific policy requirements for telecommunications development by Code System Operators or broadcasters. Such applications will need to include: (1) information about the purpose and need for the particular development including a description of how it fits into the operator's or broadcaster's wider network; (2) details of the consideration given to measures to mitigate the visual and environmental impact of the proposal; and (3) where proposals relate to the development of a mobile telecommunications base station, a statement: indicating its location, the height of the antenna, the frequency and modulation characteristics, details of power output; and declaring that the base station when operational will meet the ICNIRP guidelines for public exposure to electromagnetic fields.
- 3.15 The premise of the policy is retained within the SPPS, which states in paragraph 6.243 that planning authorities should take account of the potential effects of new telecommunications development, and any necessary enabling works, on visual amenity and environmentally sensitive features and locations. Applicants will be required to submit sufficient information which demonstrates that such considerations have been thoroughly assessed and mitigated. New masts should only be considered where site sharing is not feasible or offers an improved environmental solution. Operators will be encouraged to site share wherever possible.
- 3.16 Paragraph 6.242 of the SPPS states that, the LDP may also set out additional requirements on operators, for example, to demonstrate the need for new development and existing network constraints.

- 3.17 Furthermore paragraph 6.244 reiterates the requirements of TEL1 in relation to the development of telecommunications equipment in that applications should be accompanied by a statement declaring that when operational the development will meet the ICNIRP53 guidelines for public exposure to electromagnetic fields.
- 3.18 The SPPS however seeks a cautious approach for telecommunications proposals within designated landscapes which are of significant value, such as Areas of Outstanding Natural Beauty (AONB).
- 3.19 The second policy within PPS 10 - Policy TEL 2 states that planning permission will be refused for development proposals which would result in undue interference with terrestrial television broadcasting services.
- 3.20 The premise of this policy is retained within the SPPS, however it expands the definition of interference contained within TEL2 to include radio spectrum users (for example mobile phone services, media broadcasting and wireless broadband services). The radio spectrum is that part of the electromagnetic spectrum corresponding to radio frequencies, i.e. that part with frequencies lower than around 300 GHz. Different parts of the radio spectrum are allocated for different radio transmission technologies and applications. In some cases, parts of the radio spectrum is sold or licensed to operators of private radio transmission services (for example, cellular telephone operators or broadcast television stations).
- 3.21 It is therefore considered that the broad thrust and policy principles established by PPS10 in relation to telecommunications generally reflects what is set out in the SPPS.

4.0 District Context

Telecommunications

- 4.1 British Telecom primarily provides fixed telecommunications within the Plan area. In recent years, significant growth of mobile telecommunications has occurred. A number of providers currently operate third and fourth-generation networks, including, O2, EE, Vodafone and 3. During the Plan period, further growth in telecommunications infrastructure is anticipated, particularly to accommodate the introduction of new digital broadband technology.
- 4.2 Project Kelvin established a direct international link between the North of Ireland and North America, with the Tele-house facility located at the Fort George site, Derry. The €29.5m project is a collaborative initiative between DETI and the Rol's Department of Communications, Energy and Natural Resources (DCENR) and funded under the Interreg IV Programme. The link was completed in March 2010. The direct international link is attractive to global companies, such as leading financial houses, exchange markets, service and media companies, who require fast, low latency bandwidth that avoids traditionally congested routes, such as around the New York and London waterways. This also improved existing links to Europe with high bandwidth. Connectivity supports foreign direct investment and offers a significant competitive edge for the benefit of the Region.

Broadband

- 4.3 The Super-Connected Derry programme was funded by the Department of Culture, Media and Sport to the value of £2.2million, through the Urban Broadband Fund. The initiative aimed to place Derry at the forefront of digital technology. Businesses in Strabane also to benefitted from the scheme, offering companies funding towards the upgrade to superfast broadband. Through the scheme small to medium sized businesses across the city have been availing of grants of up to £3000 to improve their existing broadband capabilities and vouchers are allocated on a first come first served basis. The initiative allowed local businesses access to high-grade broadband and wireless connectivity and targeted companies whose performance may be directly impacted by inadequate broadband services. It was available to any small and medium sized enterprise, business or voluntary sector business within the Derry City Council and Strabane District and covered initial connectivity and installation costs, to the maximum value of £3000, and a minimum of £100. The £2.2million made available through the fund for Derry - and now also Strabane – is to boost digital capabilities and promote the region as an area worthy of foreign direct investment.
- 4.4 The development of the city's economic infrastructure, including an excellent communications network infrastructure, will be essential in promoting growth and inward investment. The SuperConnected Derry project will support this growth. Digital inclusion is important if Derry is to maximise the potential for economic

growth. In 2014 it was reported that Derry is the best city in the UK for high-speed broadband availability, according to the national regulator OFCOM. Derry is the best-performing city for availability at 99.99% in accordance with the OFCOM report dated June 2014, which it can be viewed at the following link:

<https://www.ofcom.org.uk/about-fcom/latest/media/media-releases/2014/cities-summary-report>.

- 4.5 The Northern Ireland Broadband Improvement Project is a scheme to provide for the first time, increase or improve broadband services in certain areas. The project aims to provide basic broadband in areas that have no service and to improve broadband services in certain areas where the choice is poor or broadband speeds are low. Some of these are in rural and remote parts of Northern Ireland. The broadband scheme will lay new fibre optic telephone lines from existing exchanges to new small broadband exchanges in remote areas. This will improve telecommunications infrastructure provided through telephone lines. Basic broadband speed is two megabits per second. Superfast broadband speed is more than 24 megabits per second.
- 4.6 Following procurement, BT was appointed, and work began in February 2014. It was scheduled to finish by December 2015 and, when completed, it was intended that it would bring more choice and improve speeds to over 45,000 premises. Broadband improvement work has already taken place in the following areas of Derry City and Strabane District:
- Bready
 - Castlederg
 - Claudy
 - Dunamanagh
 - Eglinton
 - Newtownstewart
- 4.7 The Northern Ireland Superfast Rollout Project, managed by the Department for the Economy (DfE), is aiming to extend the availability of Superfast Broadband across Northern Ireland. DfE - Telecoms Branch is currently undertaking a consultation exercise to confirm those areas that do not have Next Generation Access (NGA) broadband infrastructure delivering at least 30Mbps, or where there are no plans to provide such infrastructure over the next three years (these are described as “white NGA areas”). The purpose of the consultation is to enable all interested stakeholders - the public, businesses and telecommunications providers to comment on the proposed white NGA areas before further coverage is committed. DfE will then submit its final proposals for the NGA white areas, taking account of the outcome of the consultation, to Broadband Delivery UK’s (BDUK) National Competence Centre for clearance.

4.8 To support this exercise, Derry City and Strabane District Council has requested stakeholders to submit addresses and post codes of areas that are experiencing minimal or no broadband coverage in the Derry City and Strabane District Council Area. This exercise commenced on 16th November and has now been completed with 186 responses received by council. Early analysis of the information highlights residents in the following areas are receiving minimal or no Broadband coverage:

- Artigarvan
- Plumbridge
- Castlederg
- Claudy
- Newtownstewart
- Strabane
- Ballymagorry

Mobile Phone Coverage

4.9 There are four main mobile phone providers in the Derry City and Strabane Council area. There are O2, Vodafone, EE and Three. They all provide the following coverage: voicecalls, 3g Data and 4g Data. The level of service and coverage varies depending on the provider, location and whether the service is being accessed from inside or outside a building. The communications regulator of Northern Ireland, OFCOM, provides data through a series of maps outlining varying degrees of service available in the district area. The maps can be viewed in Appendix 1.

4.10 Proposals for telecommunications infrastructure will be dealt with through the Planning Development Management process under the provisions of regional policy, until the LDP policies are updated. Furthermore telecommunication operators will benefit from a degree of the permitted development rights under the Planning (General Permitted Development) Order (Northern Ireland) 2015. The LDP is unlikely to identify any specific sites for major telecommunications development.

5.0 What should the LDP deliver?

- 5.1 The key policy aims of the RDS 2035 regarding telecommunications are: Invest in infrastructure for higher broadband speeds; Improve telecom services in smaller rural areas to minimise the urban/rural divide; Increase the usage of broadband; and capitalise on direct international connectivity
- 5.2 The aim of the SPPS in relation to telecommunications and other utilities is to facilitate the development of such infrastructure in an efficient and effective manner whilst keeping the environmental impact to a minimum.
- 5.3 The SPPS sets out that the LDP must facilitate the development of such infrastructure in an efficient and effective manner whilst keeping the environmental impact to a minimum. Policy formulation within the LDP must therefore ensure that where appropriate new telecommunications development is accommodated by mast and site sharing; ensure that the visual and environmental impact of telecommunications and other utility development is kept to a minimum; minimise, as far as practicable, undue interference that may be caused to radio spectrum users (for example mobile phone services, media broadcasting and wireless broadband services) by new telecommunications development; and encourage appropriate provision for telecommunications systems in the design of other forms of development.
- 5.4 In plan-making, Derry City and Strabane District Council should bring forward policies and proposals to set out the detailed criteria for consideration of new telecommunications development in the local area which should address important planning considerations such as: siting, design, and impact upon visual amenity. To inform plan preparation, councils may consult with telecommunications operators, and other relevant stakeholders, in relation to the anticipated extent of the network coverage required over the plan period.
- 5.6 In certain circumstances and, subject to technical limitations on location and siting, LDPs may allocate specific sites for major new telecommunications development.
- 5.7 In particular, councils should take account of the potential effects of new telecommunications development, and any necessary enabling works, on visual amenity and environmentally sensitive features and locations.
- 5.8 Policies in the LDP must therefore be flexible and responsive to the development of telecommunications infrastructure whilst also playing close attention to the impact such development will have.

6.0 Councillor Workshop – Telecommunications

- 6.1 In considering and assessing the policy approach to be taken in the DCSDC district in relation to PPS10 it was important to get the views of the elected members. A paper was prepared by planning officials and presented to members to aid with discussion at a workshop on ‘Public Services and Utilities in the LDP’ which was held on 12th December 2016.
- 6.2 At the workshop members and planning officials discussed the existing telecommunications policy (PPS10) and the need, if any to tailor this policy to meet the requirements of the local setting.
- 6.3 Through these discussions members did not highlight any specific issues in relation to the policies contained within PPS10, they did however raise general concerns regarding broadband / mobile phone signal coverage across parts of the District and the impacts this has on those living and working in these particularly rural areas.
- 6.4 It is suggested therefore that there was a general consensus amongst members that the existing policies contained within PPS10 are appropriate.

7.0 Development Management Meeting

- 7.1 Planning officials in the Development Management (DM) section are responsible for the interpretation and application of the policy provisions of PPS 10 and their input is integral to determining what aspects of this policy needs to be re-examined. A meeting was held with the Development Management section of the Planning Department in relation to the Policy Review on the 13th March 2017 regarding a number of specific topic areas, including PPS 10 Telecommunications.
- 7.2 DM officers indicated they were content with the operational outworkings of PPS10. Officers considered that the broad thrust and policy principles of PPS10 & the SPPS are acceptable in terms of operational planning policy and work effectively and were of the opinion that the policy principles for telecommunications are taken forward in the development of new policy for our Local Development Plan.

8.0 Policy Approach

- 8.1 There are a number of options that could be taken through to the Plan Strategy in relation to Telecommunications. It is considered by planning officers that the broad thrust and policy principles are acceptable in terms of operational planning policy and work effectively.

TEL 1 Control of Telecommunications Development

- 8.2 The above policy relates specifically to the control of telecommunication development and includes the requirement that they have regard to technical and operational constraints, as well as siting and design in order to minimise visual and environmental impact
- 8.3 **Approach 1:** Retention of existing policy TEL1.
- 8.4 **Approach 2:** Retention policy TEL1 with modifications in line with SPPS
- 8.5 It was seen that this policy currently working well. It is therefore considered the thrust of this policy is retained.
- 8.6 **Preferred Approach** – There is general conformity with TEL1 and the SPPS. It is suggested that this policy should be retained in the LDP with modifications in line with the SPPS. However additional protection should be afforded to the districts natural environment and in particular designated areas such as ANOB.

TEL 2 Development and Interference with Television Broadcasting Services

- 8.7 The above policy relates specifically to interference with terrestrial television broadcasting services as a result of development.
- 8.8 **Approach 1:** Retention of existing policy TEL2.
- 8.9 **Approach 2:** Retain policy TEL2 with modifications in line with SPPS
- 8.10 **Preferred Approach** – There is general conformity with TEL2 and the SPPS. It is suggested that this policy should be retained with modifications in line with the SPPS as it protects existing development from interference.

9.0 Conclusion

- 9.1 The LDP needs to look at how we can seek to facilitate and develop Telecommunications development in our district but we must also ensure that its location and scale will not impact on our built and natural environmental assets such as the Sperrins AONB and the River Foyle and tributaries. We need to strike a balance between promoting telecommunications development as a means of generating income for the local economy and attracting investment against the need to protect and enhance the built and natural environment of the District in a sustainable manner.
- 9.2 In light of the review of the policies contained with PPS 10, as well as discussion held with Members and the Development Management team, it is considered that the entirety of the policy should be retained.

Recommendations

- 9.4 It is recommended that these policy approaches are considered and are subject to public consultation at the POP stage. Based on the feedback received, in due course, appropriate draft policies can be developed which will be subject to Sustainability Appraisal, incorporating Strategic Environmental Assessment at the Plan Strategy stage.

Appendix 1 – Derry City and Strabane District Mobile Phone Coverage

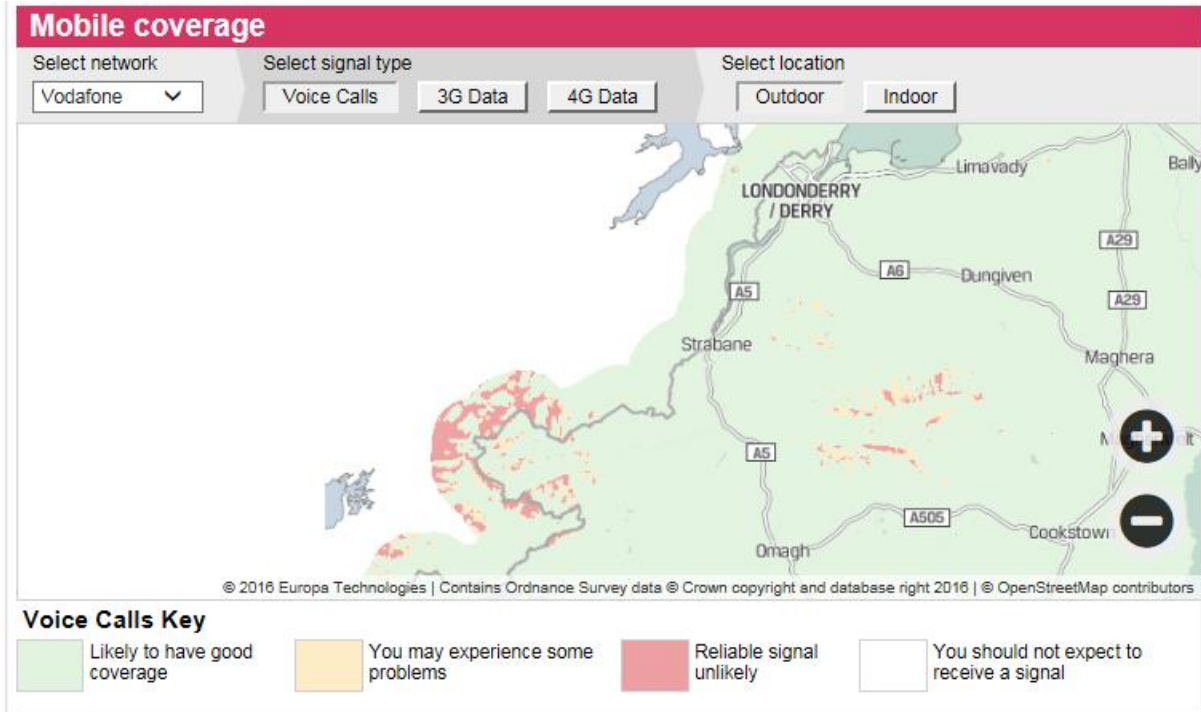


Image 1: Coverage for Vodafone voice calls when outside

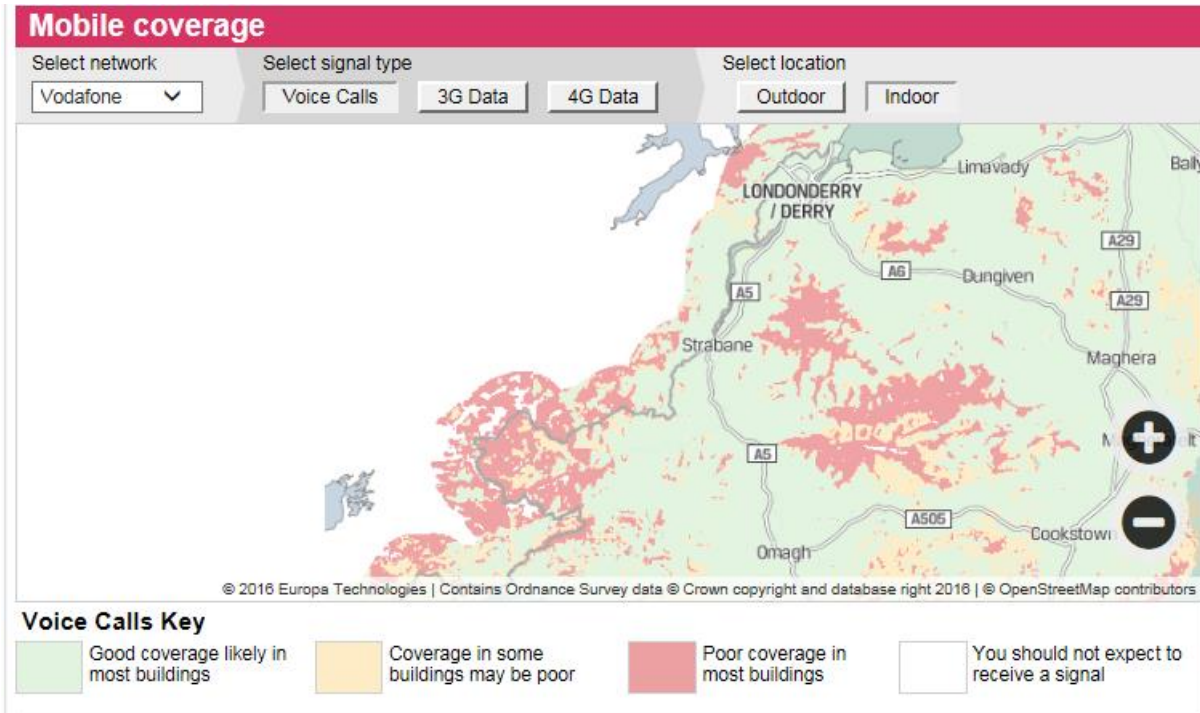


Image 2: Coverage for Vodafone voice calls when inside

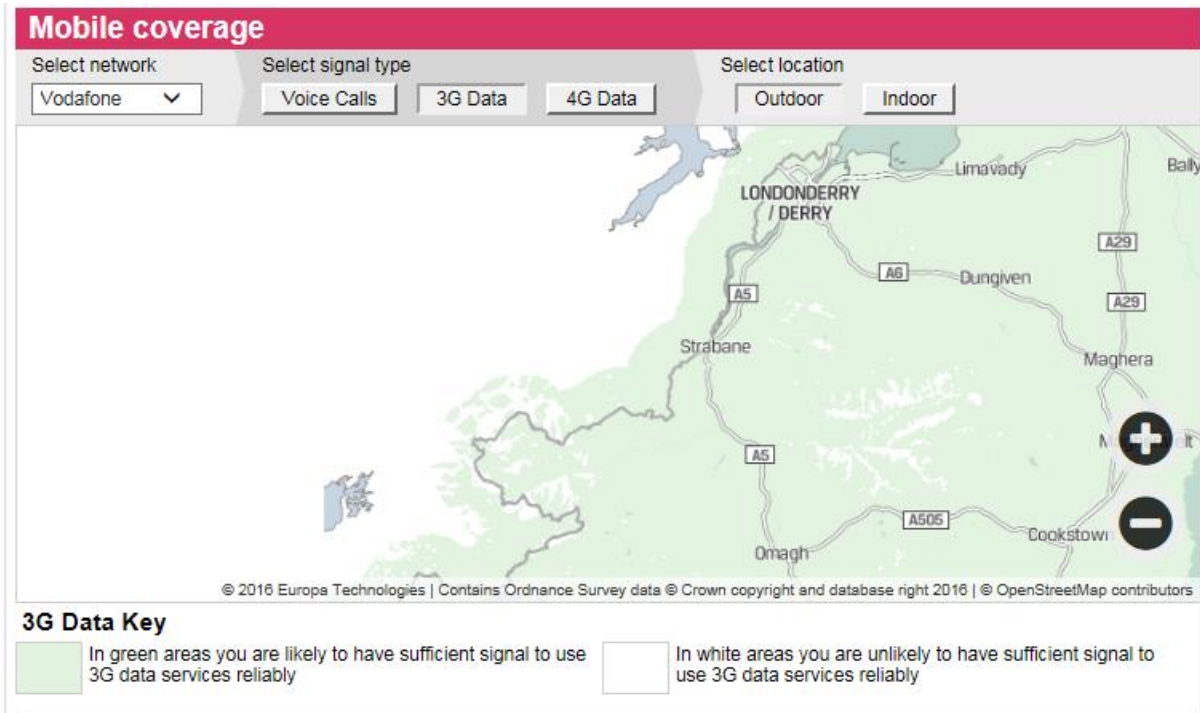


Image 3: Vodafone 3g coverage when outdoor

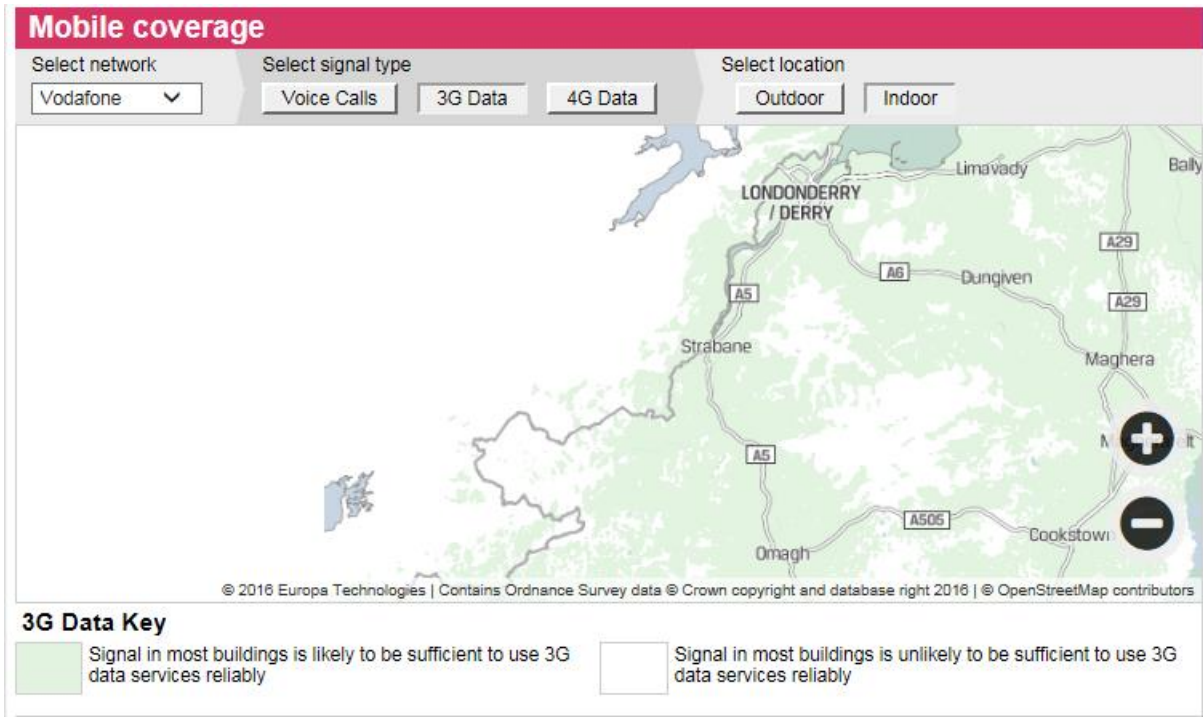


Image 4: Vodafone 3g coverage when indoor

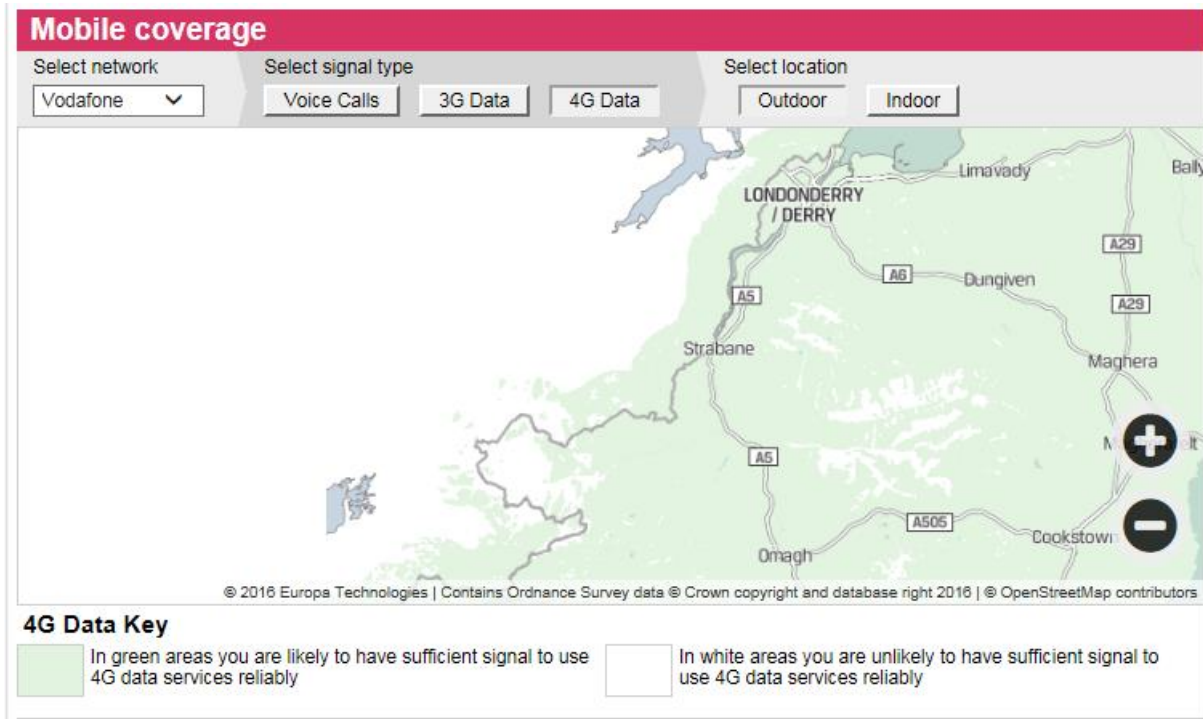


Image 5: Vodafone 4g coverage when outdoor

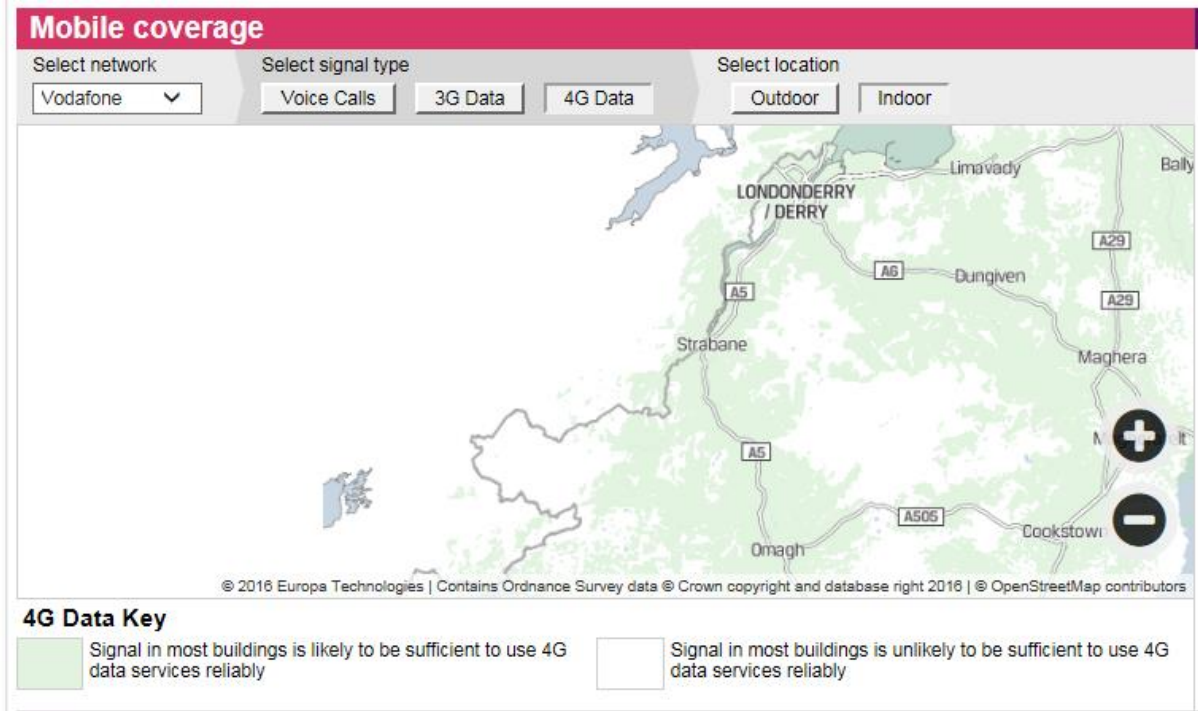


Image 6: Vodafone 4g coverage when indoor

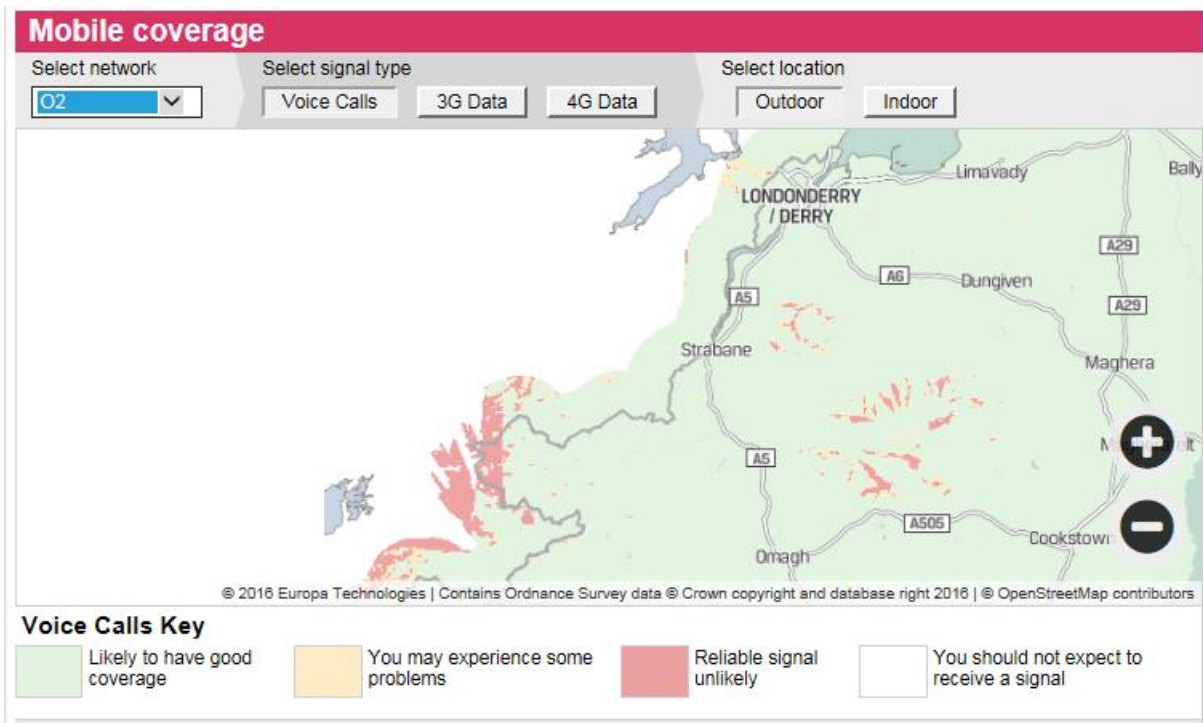


Image 7 Coverage for O2 voice calls when outside

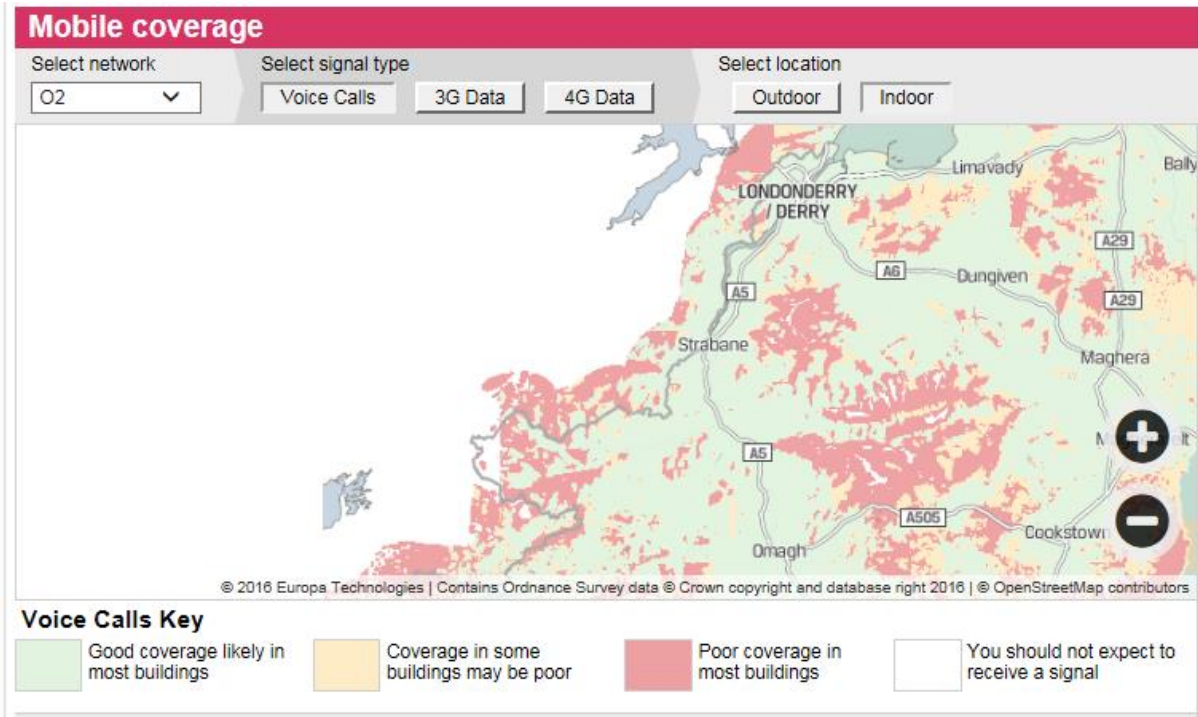


Image 8: Coverage for O2 voice calls when indoor

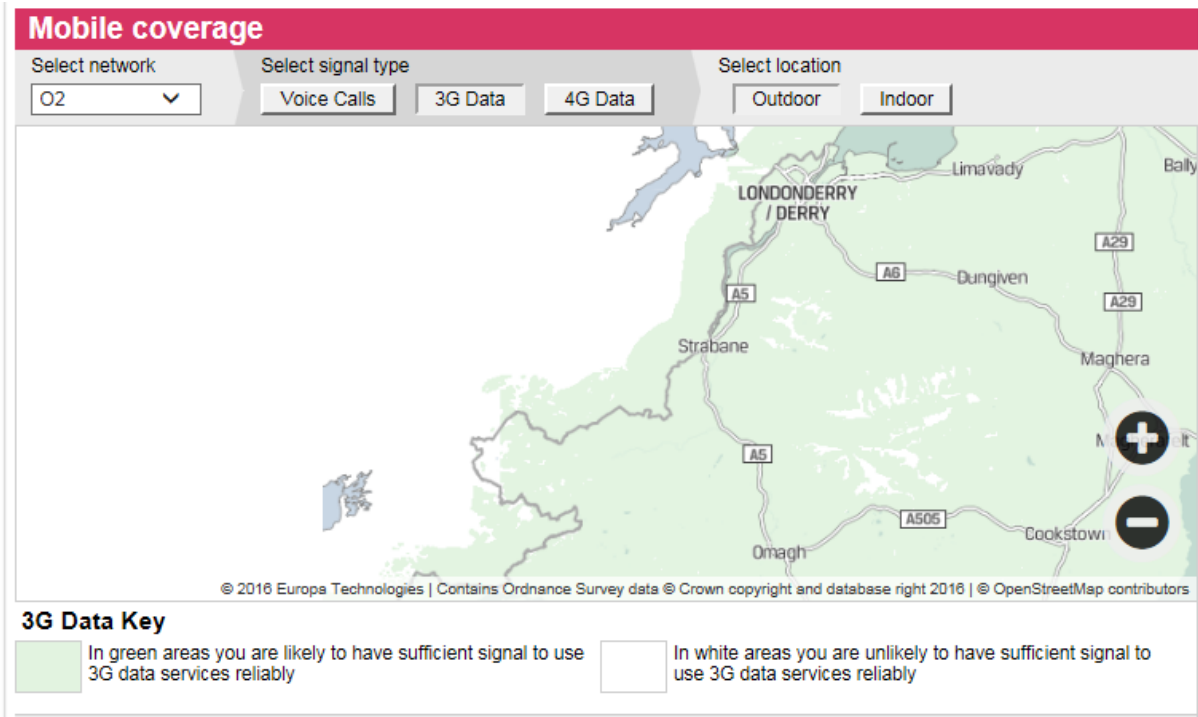


Image 9: O2 3g coverage when outdoor

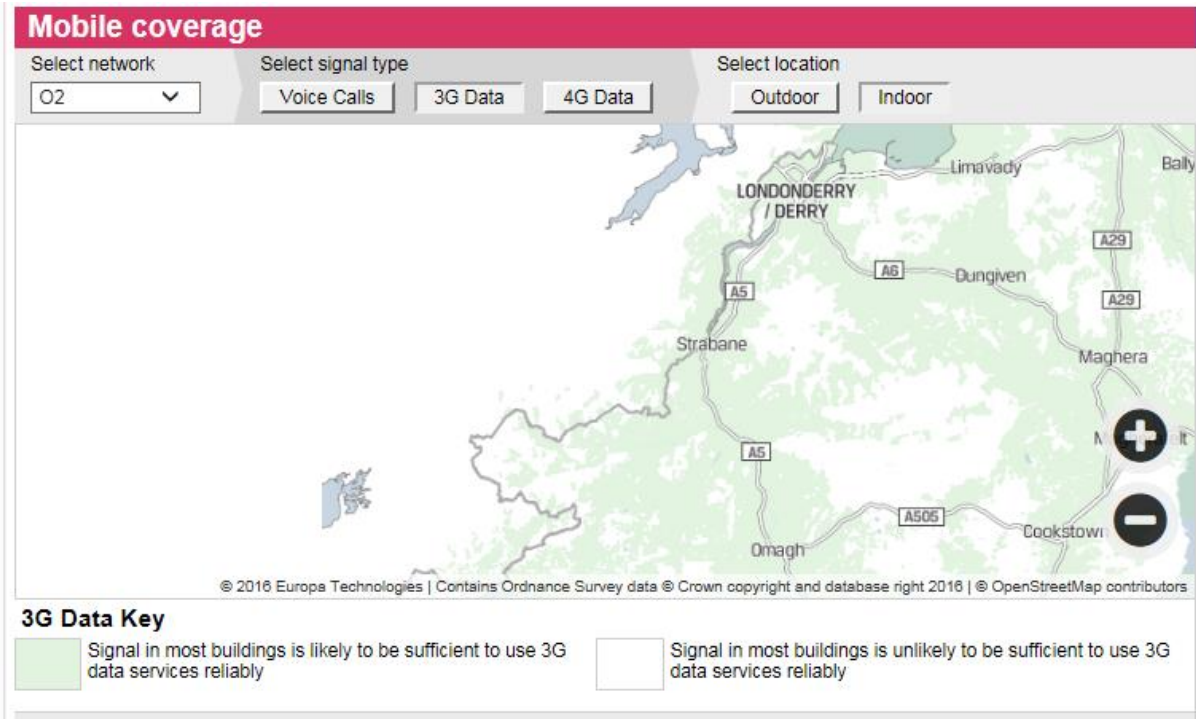


Image 10: O2 3g coverage when indoor

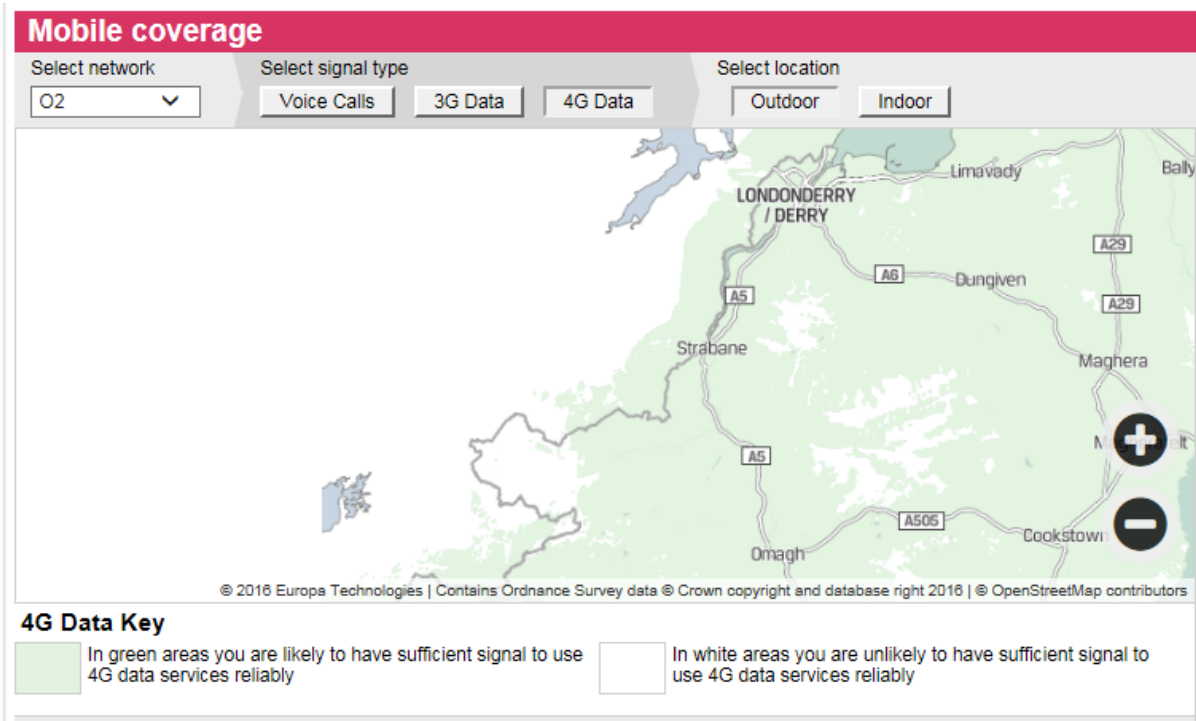


Image 11: O2 4g coverage when outdoor

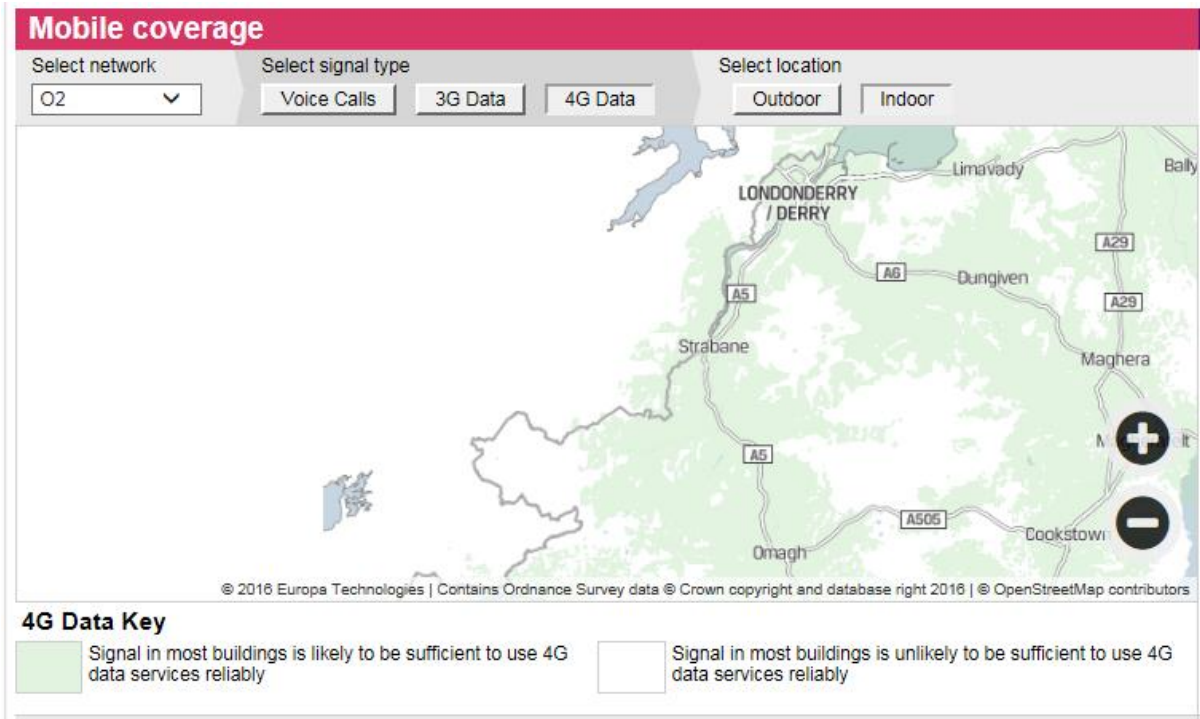


Image 12: O2 4g coverage when outdoor

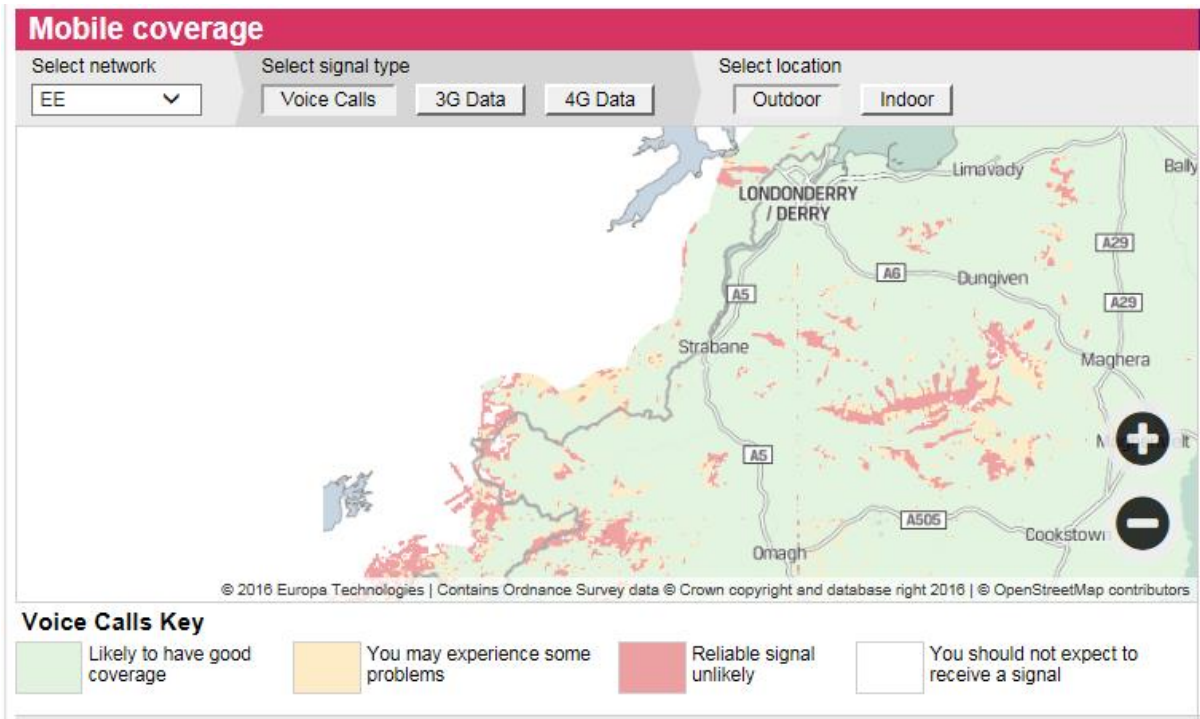


Image 13: Coverage for EE voice calls when outdoor

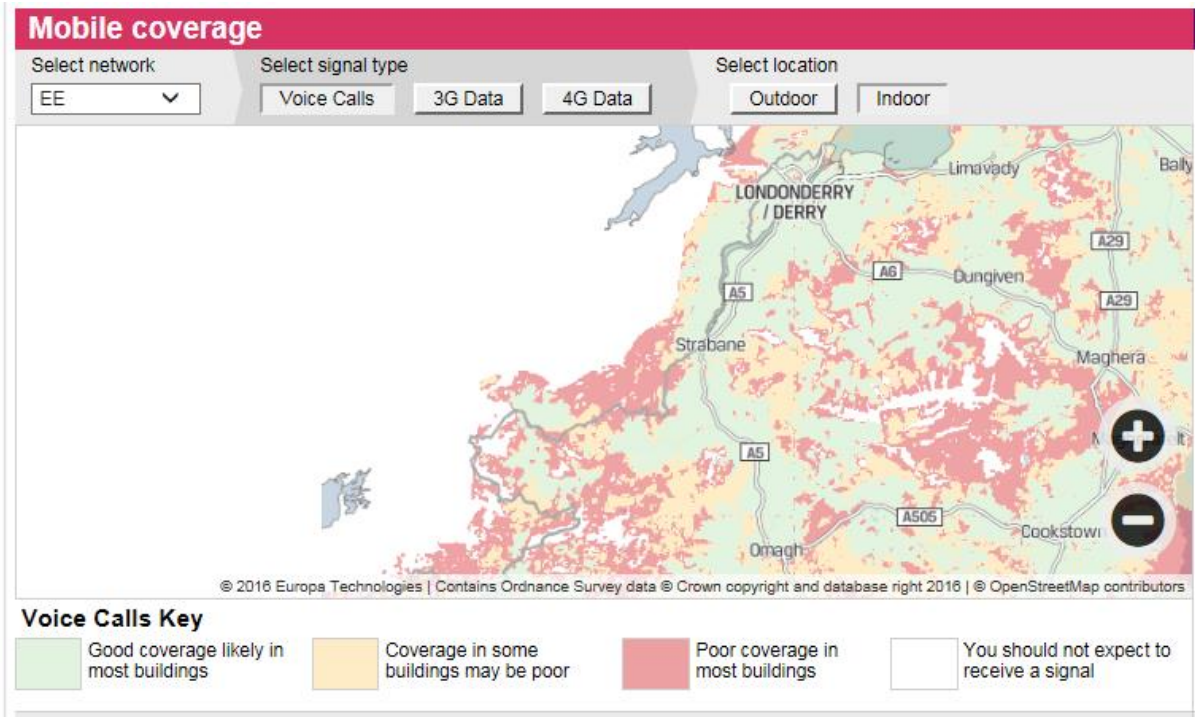


Image 14: Coverage for EE voice calls when indoor

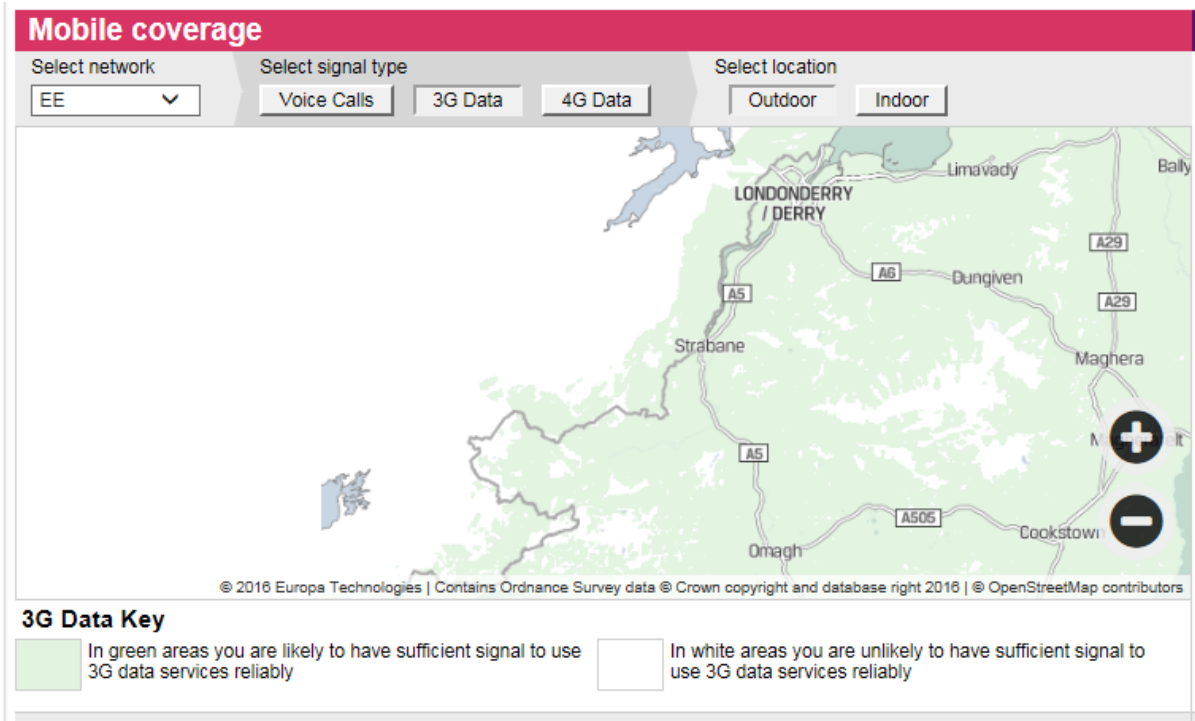


Image 15: EE 3g coverage when outdoor

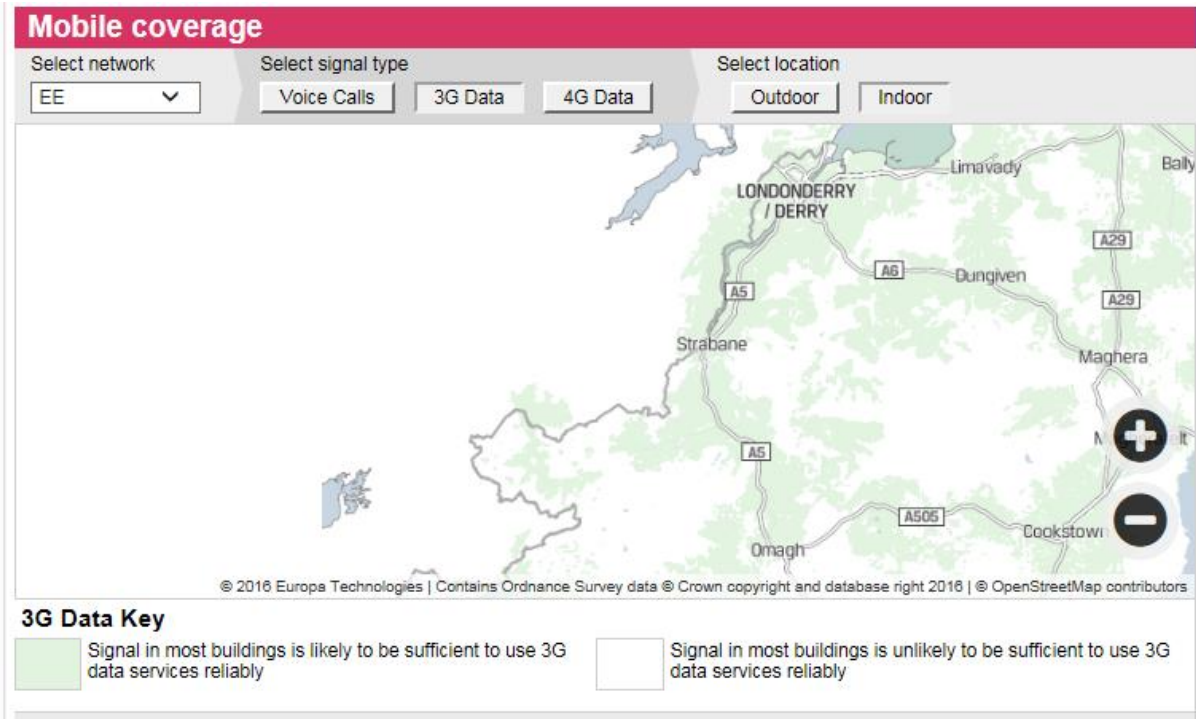


Image 16: EE 3g coverage when indoor

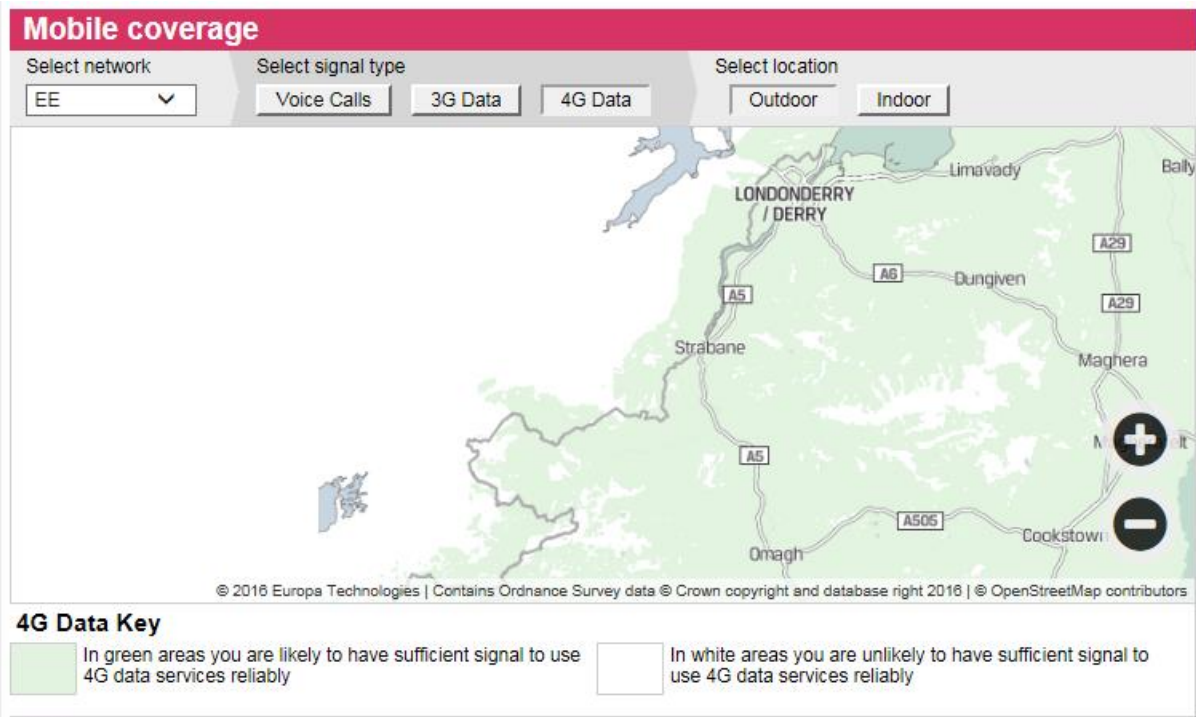


Image 17: EE 4g coverage when outdoor



Image 18: EE 4g coverage when indoor

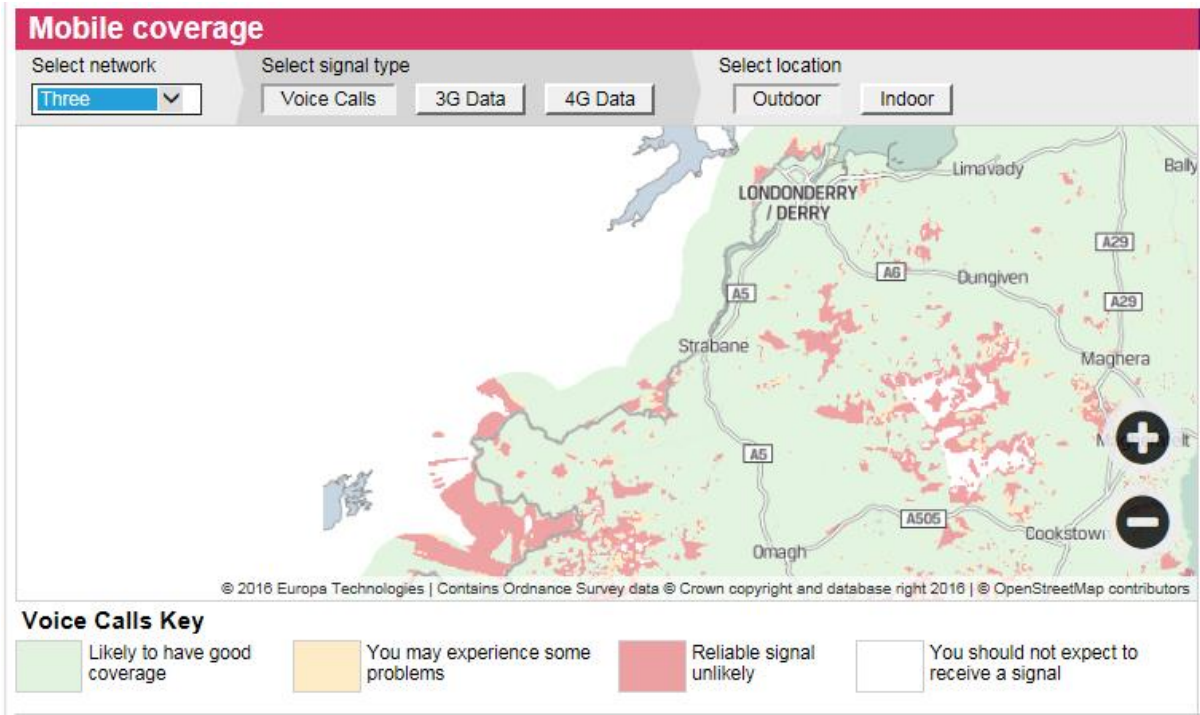


Image 19: Coverage for Three voice calls when outdoor

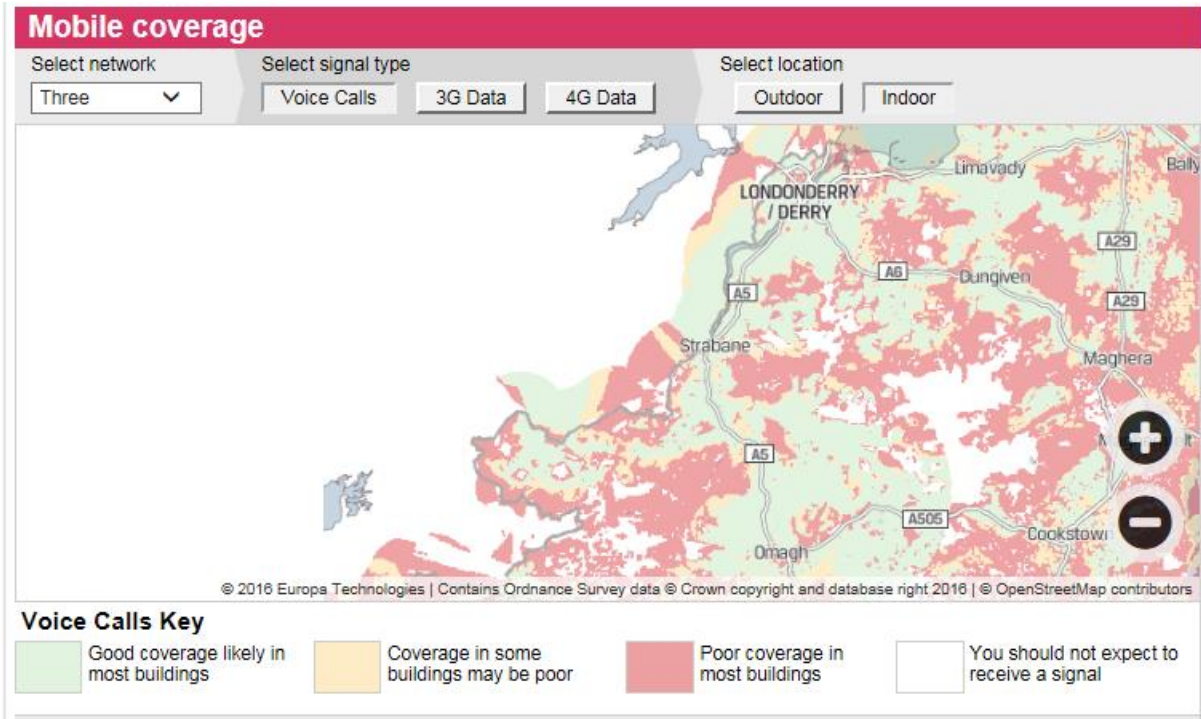


Image 20: Coverage for Three voice calls when indoor

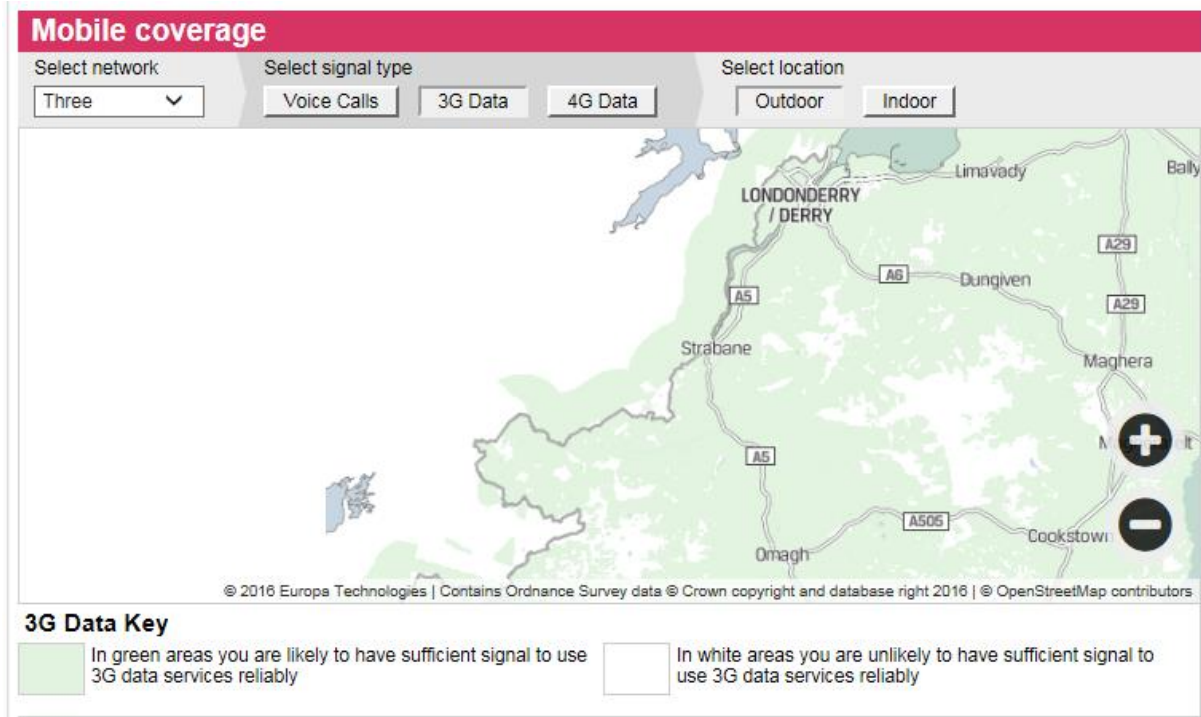


Image 21: Three 3g coverage when outdoor

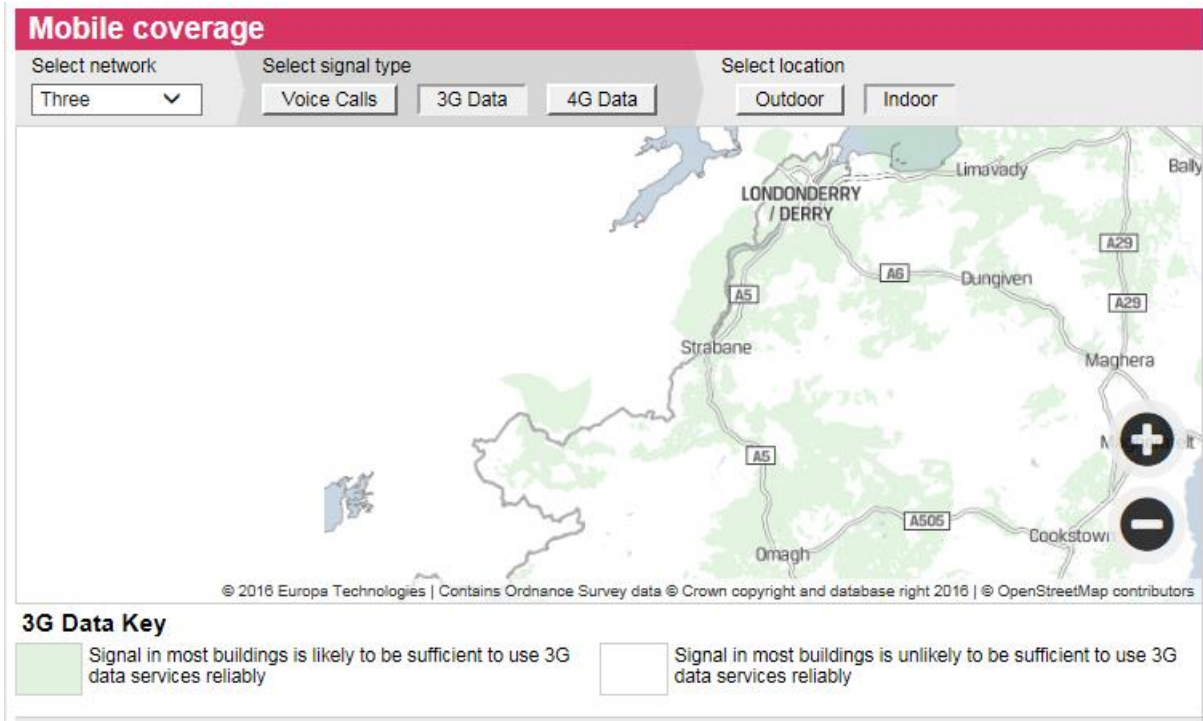


Image 22: Three 3g coverage when outdoor

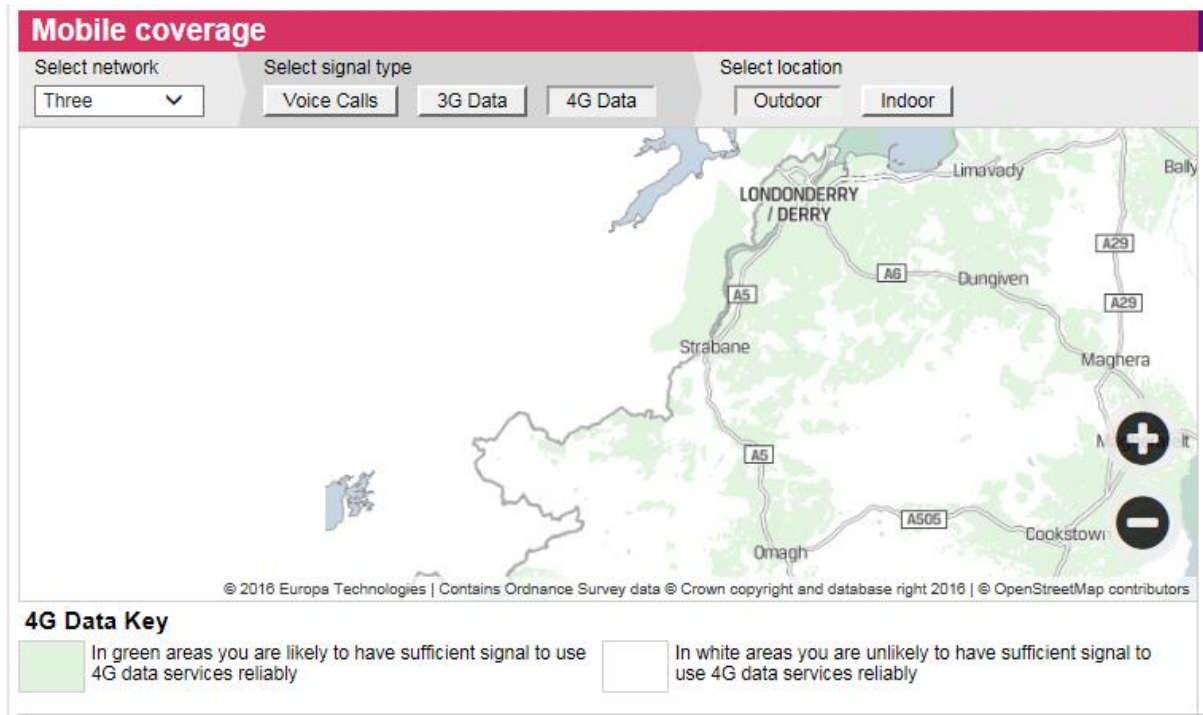


Image 23: Three 4g coverage when outdoor

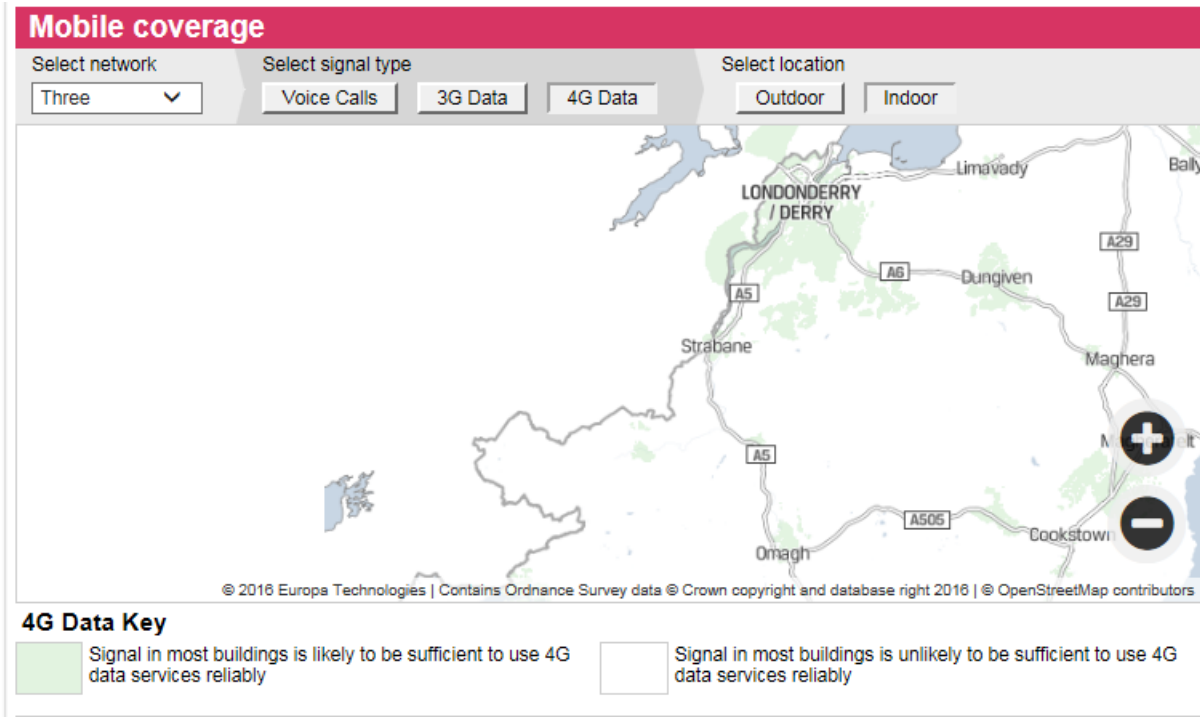


Image 24: Three 4g coverage when indoor