

Initial Report

Last Modified: 10/02/2014

1. Are you content for the Government to publish your response?

#	Answer	Bar	Response	%
1	Yes, I would like the Government to publish my response.		1	100%
2	No, I do not want the Government to publish my response.		0	0%
	Total		1	

2. Please explain why you regard the information you have provided in response to this consultation as confidential.

This question was not displayed to the respondent.

3. Name

Text Response

Mark Barrett

4. Are you responding on behalf of an organisation?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

5. Organisation name

Text Response

Blu Wireless Technology Ltd

6. Contact email address

Text Response

mark.barrett@bluwirelesstechnology.com

7. Contact address

Text Response

Engine Shed, Station Approach, Temple Meads, Bristol, BS1 6QH

8. Please select which category best describes you or your organisation

#	Answer	Bar	Response	%
1	Academia/research		0	0%
2	Broadcasting		0	0%
3	Consumer/user		0	0%
4	Consumer group		0	0%
5	Fixed communications provider		0	0%
6	Industry organisation		0	0%
7	Infrastructure provider		0	0%
8	Internet Service Provider		0	0%
9	Local Government or other public sector		0	0%
10	Mobile communications provider		0	0%
11	Satellite communications provider		0	0%
12	Technology company		1	100%
13	Other		0	0%
14	Business user or business group		0	0%
	Total		1	

9. If other, please give details.*This question was not displayed to the respondent.***10.** Is this an appropriate role for Government?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

11. Are there other high level principles the Government might adopt?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

12. If yes, please give details.

Text Response

Government should take an active role in facilitating open access to radio spectrum resources by working through UK level (Ofcom) and EU level (CEPT and ETSI) regulatory organisations. Significant opportunities to increase broadband performance and penetration exist through the use of millimetre wave radio frequencies (30 – 100 GHz). Specifically, cost effective technologies are emerging for use in the un-licensed 60 GHz band (57 – 64 GHz) which have the capability to deliver gigabit rate broadband over the 'last mile' of Internet connection which complement the increasing roll out of fibre. The combination of millimetre wave wireless and fibre networks (Hybrid Fibre Wireless) for gigabit broadband is seen as a cost effective approach by operators such as AT&T and Google in the US market. However, historical radio regulation rules for operation in this frequency band prevent the use of these technologies in UK and EU and therefore a review of these rules (CEPT REC(09)01) is urgently needed to pave the way for the UK broadband market to take advantage of these technologies.

13. What resources do you consider the Government should aim to deploy to effectively manage its role?

Text Response

Those expert resources at Ofcom necessary to support the response to Q1b.

14. What potential opportunities are there for Government to leverage its combined buying power to support policy objectives?

Text Response

Procurement rules should recognise leadership role in deploying new technology for new government initiatives. Where possible the objective should be to deploy leading edge technologies from UK companies in order to seed demand in export markets. A good example is in providing high capacity wireless back haul for 4G LTE networks for dense urban deployments in (eg) London. Planning permission and procurement rules should be aligned to ease installation of leading technologies - thus increasing coverage and performance for 4G coverage and opportunity for the UK wireless industry.

15. If migration to IPv6 is required, are there any barriers to that migration?

#	Answer	Bar	Response	%
1	I think there are significant barriers.		0	0%
2	I think there are insignificant barriers.		1	100%
3	I do not think there are any barriers.		0	0%
4	I do not think IPv6 is required.		0	0%
	Total		1	

16. How might these barriers be addressed?

This question was not answered by the respondent.

17. Is an ongoing disparity of provision of broadband services across the country inevitable?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

18. If so, should this be addressed?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

19. How might this be done most effectively?

Text Response

Through working with local authorities on public/private network infrastructure deployment.

20. How symmetrical will digital communications networks have to be in the future? Will this differ across user types? What implications does this have for fixed and wireless broadband provision?

Text Response

Gigabit rate wireless technologies operating at millimetre wave have the capability to be entirely flexible in how up and down link traffic is allocated. Asymmetry in Broadband services is a historical feature of ADSL over copper wire telephone lines which, if bypassed via fibre or wireless, can be eliminated from broadband delivery.

21. Which countries should be our benchmarks on communications infrastructure to ensure that business remains in the UK and continues to invest?

Text Response

According to worldwide broadband speed tests published by Ookla's Netindex website (www.netindex.com) the UK ranks #26 in download speeds (29.4Mbps) as compared to : #1 Hong Kong : 94.5 Mbps #6 Sweden : 47.6 Mbps #9 Netherlands : 43.9 Mbps #18 Belgium : 34.4 Mbps #21 France : 33.6 Mbps #25 USA : 29.9 Mbps #26 UK : 29.4 Mbps EU countries such as Sweden, Netherlands, Belgium and France should be used as reference points. Moreover, exploiting and improving technologies emerging from the US market for fibre and wireless broadband could have a rapid impact on moving the UK up the above rankings.

22. What metrics do you think should or will become relevant in comparing network performance in different countries?

Text Response

See Q6.

23. What metrics should most appropriately be used as the basis to set objectives for Government policy?

Text Response

See Q6.

24. Do you agree with this scenario or elements within it?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%
2	Disagree		1	100%
3	Neither Agree nor Disagree		0	0%
4	Agree		0	0%
5	Strongly Agree		0	0%
	Total		1	

25. Where do you agree/disagree? If you disagree what alternative scenario do you envisage?

Text Response

This scenario assumes that all users will consume data via mobile devices delivered via centralised mobile networks. It underestimates the capabilities of other networks - fixed wire and satellite to deliver increased amounts of (eg) UHD content and also the opportunity to deliver decentralised networks operated at city or town level to provide improved services via wireless enabled fibre networks.

26. What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

Text Response

Too much emphasis on mobile networks and insufficient emphasis on other technologies - ad hoc wired/wireless, fibre and satellite.

27. Are there technologies not identified here that you think will have a major impact on the performance of existing infrastructure or the deployment of additional infrastructure in the next 10-15 years?

#	Answer	Bar	Response	%
1	Yes		1	100%

2	No		0	0%
	Total		1	

28. If yes, please give details.

Text Response

Millimetre wave wireless has the capability to deliver gigabit rate broadband over the last link between the user and the fibre network.

29. Are there wider environmental issues not reflected in the scenario e.g. the price of availability of energy that will affect any of the scenarios?

#	Answer	Bar	Response	%
1	Yes		0	0%
2	No		1	100%
	Total		1	

30. In what way might these wider environmental issues affect any of the scenarios?

This question was not displayed to the respondent.

31. How likely is any unforeseen disruption to this scenario?

#	Answer	Bar	Response	%
1	Very Unlikely		0	0%
2	Unlikely		0	0%
3	Undecided		0	0%
4	Likely		1	100%
5	Very Likely		0	0%
	Total		1	

32. In what area might it occur?

This question was not displayed to the respondent.

33. Do you agree with this scenario or elements within it?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%

2	Disagree		0	0%
3	Neither Agree nor Disagree		0	0%
4	Agree		1	100%
5	Strongly Agree		0	0%
	Total		1	

34. Where do you agree/disagree? If you disagree what alternative scenario do you envisage?

This question was not answered by the respondent.

35. What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

Text Response

Millimetre wave wireless technologies will play an important role in the creation of 5G standards in order to deliver gigabit rate data rates. Work has already started in Asia aimed at first 5G roll out by 2020 and lobbying for new frequencies will start at WRC15 and be completed by WRC19.

36. Are there technologies not identified here that you think will have a major impact on the performance of existing infrastructure or the deployment of additional infrastructure in the next 10-15 years?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

37. If yes, please give details.

Text Response

Millimetre wave wireless operating within licensed (5G) and unlicensed (60 GHz for broadband) frequencies.

38. Are there wider environmental issues not reflected in the scenario e.g. the price of availability of energy that will affect any of the scenarios?

#	Answer	Bar	Response	%
1	Yes		0	0%
2	No		1	100%
	Total		1	

39. In what way might these wider environmental issues affect any of the scenarios?

This question was not displayed to the respondent.

40. How likely is any unforeseen disruption to this scenario?

#	Answer	Bar	Response	%
1	Very Unlikely		0	0%
2	Unlikely		0	0%
3	Undecided		1	100%
4	Likely		0	0%
5	Very Likely		0	0%
	Total		1	

41. In what area might it occur?

This question was not displayed to the respondent.

42. Do you agree with this scenario or elements within it?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%
2	Disagree		0	0%
3	Neither Agree nor Disagree		0	0%
4	Agree		1	100%
5	Strongly Agree		0	0%
	Total		1	

43. Where do you agree/disagree? If you disagree what alternative scenario do you envisage?

Text Response

I do not believe that Driver-less cars will become an accepted mode of transport (3.40) I strongly agree that Gigabit rate broadband will become the norm as is already happening in US and Asia (3.41).

44. What are your views on the technology commentary underpinning this scenario? To what extent might the infrastructure/technology discussed evolve irrespective of demand and how far it be a direct consequence of the level of demand?

Text Response

See previous answers on the opportunities created by the combination of millimetre wave wireless and fibre networks (Hybrid Fibre Wireless) for gigabit broadband delivery.

45. Are there technologies not identified here that you think will have a major impact on the performance of existing infrastructure or the deployment of additional infrastructure in the next 10-15 years?

#	Answer	Bar	Response	%
1	Yes	<div></div>	1	100%
2	No	<div></div>	0	0%
	Total		1	

46. If yes, please give details.

Text Response

LiWi - use of high speed data modulated onto visible light.

47. Are there wider environmental issues not reflected in the scenario e.g. the price of availability of energy that will affect any of the scenarios?

#	Answer	Bar	Response	%
1	Yes	<div></div>	0	0%
2	No	<div></div>	1	100%
	Total		1	

48. In what way might these wider environmental issues affect any of the scenarios?

This question was not displayed to the respondent.

49. How likely is any unforeseen disruption to this scenario?

#	Answer	Bar	Response	%
1	Very Unlikely	<div></div>	0	0%
2	Unlikely	<div></div>	0	0%
3	Undecided	<div></div>	1	100%
4	Likely	<div></div>	0	0%
5	Very Likely	<div></div>	0	0%
	Total		1	

50. In what area might it occur?

This question was not displayed to the respondent.

51. Are there factors, for example technical or unrelated to the regulatory framework, that could create bottlenecks and delay future infrastructure deployment in the UK in this timeframe, that would result in demand not being met or the UK not being seen as a leading digital nation?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

52. Please give details.

Text Response

The underlying technologies needed for the deployment of wired and wireless broadband are highly dependent on the \$B's of investment in semiconductors, computing and wireless technologies being developed for mainstream CE markets of WiFi, Gaming, Automotive and Mobiel communications. Alignment is therefore essential to maximise cost effective deployment.

53. Do you expect commercial providers to deliver future infrastructure and meet demand on a purely commercial basis, or is some form of public intervention likely?

#	Answer	Bar	Response	%
1	Commercial providers will meet demand on a purely commercial basis.		0	0%
2	Some form of public intervention is likely.		1	100%
	Total		1	

54. If public intervention is likely how might that work with the commercial provision of infrastructure? What form might that intervention take?

Text Response

Capital investment during infrastructure investment will be high and ROIs over the short timescale demanded by commercial lenders may prevent investment by smaller and more local operators - eg at city or town level. Therefore, access to longer term finance via government may be one means of encouraging increased rollout of innovative networks.

55. Which current or draft legislation might prevent or facilitate the emergence of any of the scenarios?

This question was not answered by the respondent.

56. Do you have views on which scenario (or combination of scenarios) is most likely and should influence the development of future strategy?

#	Answer	Bar	Response	%
1	Scenario 1		0	0%
2	Scenario 2		0	0%
3	Scenario 3		0	0%
4	None		1	100%

57. Please give your reasoning for why you think this scenario or combination of scenarios is most likely.

This question was not answered by the respondent.

58. How might efficient investment in communications infrastructure be supported, for example by changes in the regulatory framework?

Text Response

Government should take an active role in facilitating open access to radio spectrum resources by working through UK level (OFCOM) and EU level (CEPT and ETSI) regulatory organisations. Significant opportunities to increase broadband performance and penetration exist through the use of millimetre wave radio frequencies (30 – 100 GHz). Specifically, cost effective technologies are emerging for use in the un-licensed 60 GHz band (57 – 64 GHz) which have the capability to deliver gigabit rate broadband over the 'last mile' of Internet connection which complement the increasing roll out of fibre. The combination of millimetre wave wireless and fibre networks (Hybrid Fibre Wireless) for gigabit broadband is seen as a cost effective approach by operators such as AT&T and Google in the US market. However, historical radio regulation rules for operation in this frequency band prevent the use of these technologies in UK and EU and therefore a review of these rules (CEPT REC(09)01) is urgently needed to pave the way for the UK broadband market to take advantage of these technologies.

59. Are any further measures necessary to incentivise the rollout of future mobile infrastructure in currently underserved areas?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

60. Please give details.

Text Response

Relaxation of planning rules for the deployment of mobile basestations.

61. Is there a role for a revised USO or USC to ensure that minimum consumer

demand requirements are met and to reduce the potential for a new digital divide?
What might this look like?

#	Answer	Bar	Response	%
1	I think there is a role for a revised USO		0	0%
2	I think there is a role for a revised USC		0	0%
3	I think there is a role for both a revised USC and a revised USO		0	0%
4	I do not think a revised USO or USC are needed		1	100%
	Total		1	

62. What might this look like?

This question was not displayed to the respondent.

63. In terms of supporting future innovation and long-term investment in infrastructure, what areas of broadcasting regulation may have served its purpose by 2025 -2030 (or indeed earlier). What future technical developments may also have longer term implications for regulation and wider public policy?

This question was not answered by the respondent.

64. Are there changes to the EU Framework that the UK might seek to encourage more competition in UK markets?

#	Answer	Bar	Response	%
1	Yes		1	100%
2	No		0	0%
	Total		1	

65. Please give details.

Text Response

A stronger emphasis on relaxing regulatory frameworks, many of which are derived from historical specialist use cases, is required. Is there is a case for the creation of a EU wide version of the US FCC with a remit to relax and harmonise regulations across the EU?

66. Should Government seek changes to the European Framework which put more reliance on competition law?

#	Answer	Bar	Response	%
1	Strongly Disagree		0	0%
2	Disagree		0	0%

3	Neither Agree nor Disagree		0	0%
4	Agree		1	100%
5	Strongly Agree		0	0%
	Total		1	

67. How might this be done?

Text Response

See Q31.

68. In what ways can you see competition driving technological change in the UK in the future?

Text Response

Care is needed to balance encouraging EU technologies to grow during early deployments where costs will be high in order to avoid domination by high volume/ low cost solutions from Asia and US suppliers.

69. How can the regulatory framework keep up to date with new business models and changes in technology?

This question was not answered by the respondent.

70. Are there any changes to legislation other than the Communications Act that would incentivise the provision of communications infrastructure?

#	Answer	Bar	Response	%
1	Yes		0	0%
2	No		1	100%
	Total		1	

71. What might these changes be?

This question was not displayed to the respondent.

72. Would there be benefits to investment from a focus on broadband only services? Are there any barriers to the emergence and adoption of broadband only services, whilst still providing necessary access to emergency services?

#	Answer	Bar	Response	%
1	Yes		0	0%
2	No		1	100%

	Total		1	
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73. Please give details.

This question was not answered by the respondent.

74. Are there any barriers to the emergence and adoption of broadband only services, whilst still providing necessary access to emergency services?

#	Answer	Bar	Response	%
1	Yes		0	0%
2	No		1	100%
	Total		1	

75. Please give details.

This question was not answered by the respondent.

76. How might copper access networks evolve over time alongside other access technologies? Is there a role for policymakers in helping manage any transition from copper to other access networks?

This question was not answered by the respondent.

77. Views are sought on whether there are any additional actions the Government should consider to ensure that the provision of all areas of the UK's digital communications infrastructure remains competitive in order to ensure that the UK can take full advantage of growth opportunities in the Digital Age.

This question was not answered by the respondent.

78. Aside from legislation and adapting the regulatory framework in the broad sense which other actions should the Government take to encourage investment in communications infrastructure?

This question was not answered by the respondent.

79. Views are sought on whether there are any additional actions the Government should consider to ensure that potential investment in the provision of digital communications infrastructure offers a suitable risk and reward profile to ensure that they can be financed by the private sector.

This question was not answered by the respondent.

80. Views are sought on the case for the UK to invest to gain 'early mover advantage'.

This question was not answered by the respondent.

81. Views are sought on what areas in particular the UK should aim to see investment in.

This question was not answered by the respondent.

82. Are there any actions not covered elsewhere in this report that the government should consider to ensure digital communications infrastructure is in place before it is needed and such that it helps generate need?

This question was not answered by the respondent.

83. How might we maximise the current R&D and innovation UK landscape to help take advantage of the opportunities provided by future technologies? What needs to be done by Government and its agencies, and industry to tackle any gaps?

This question was not answered by the respondent.

84. In which future communications technologies that you consider the UK has, or could achieve, an international leadership position?

Text Response

Wireless technologies utilise many of the historical skills present in the UK Electronics industry from silicon (ARM, Imagination), software and radio frequencies technologies. Many world leading Tier 2/3 OEM companies operate from the UK (CBNL, IP Access, Sub10, Airspan) and encouragement during procurement cycles is needed to avoid networks being dominated by equipment supplied by overseas suppliers.

85. What more might government and industry do to exploit future technologies, associated new applications and emerging business models?

This question was not answered by the respondent.

86. What role might local bodies have in facilitating the future delivery of digital communications infrastructure?

This question was not answered by the respondent.

87. How can councils maximise the digital communications infrastructure in their local area to support their work on economic regeneration?

This question was not answered by the respondent.

88. Please provide details of information you feel is relevant to the development of the Digital Communications Infrastructure Strategy and not already covered by the consultation questions.

This question was not answered by the respondent.