Your response

Question	Your response

Executive Summary

As critical systems users, the Joint Radio Company (JRC) welcomes the opportunity to respond to this consultation on behalf of the electricity and gas transmission and distribution network operators. JRC highlights that the control and monitoring of electricity networks are dependent on access to resilient and robust data communications which will not be available from public mobile networks. Also, it is generally accepted that, as part of the UK's critical national infrastructure, the evolving "Smart Grid" networks, with their existing intelligent electricity monitoring and control systems, are being expanded to the extremes of the local electricity network. This expansion in the operational communications will require access to additional spectrum. This developing need is being explored within Ofcom's current direct engagement with the Energy Utilities; which we welcome.

Whilst it is noted that Ofcom has also published an accompanying document giving an 'Overview of all of the steps we are taking to improve mobile coverage', with the utilities having only been allocated 2 x 1 MHz of spectrum by Government, JRC is very keen to establish options for long-term access to additional suitable spectrum for resilient wide-area utility systems to support the Energy Network Operators operational control capability.

JRC is concerned that Ofcom may be intending to introduce a general policy of licencing additional users within existing exclusive licensed spectrum. If so, where spectrum is deployed for operational telecommunications systems that serve Critical National Infrastructure, those frequency bands should be excluded from this policy intervention, i.e. avoiding having the issue of the Tenant in the first place who would subsequently need to be displaced.

The Joint Radio Company Ltd (JRC)

JRC Ltd is a wholly owned joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries used to support operational, safety and emergency communications.

JRC manages blocks of VHF and UHF spectrum for Private Business Radio applications, telemetry & tele-control services and network operations. JRC created and manages a national cellular plan for co-ordinating frequency assignments for a number of large radio networks in the UK.

The VHF and UHF frequency allocations managed by JRC support telecommunications networks to keep the electricity and gas industries in touch with their field engineers throughout the country. These networks provide comprehensive geographical coverage to support the installation, maintenance and repair of plant in all weather conditions on a 24 hour/365 days per year basis.

JRC's Scanning Telemetry Service is used by radio-based System Control And Data Acquisition (SCADA) networks which control and monitor safety critical gas and electricity industry plant and equipment throughout the country. These networks provide resilient and reliable communications at all times to unmanned sites and plant in remote locations to maintain the integrity of the UK's energy generation, transmission and distribution.

JRC also manages microwave fixed link and satellite licences on behalf of the utility sector.

JRC supports the European Utility Telecommunications Council's (EUTC) Radio Spectrum Group and participates in other global utility telecom organisations. JRC participates in European

Telecommunications Standards Institute (ETSI) working groups developing new radio standards, and also European telecommunications regulatory groups and workshops.

JRC works with the Energy Networks Association's Future Energy Networks Groups assessing ICT implications of Smart Networks, Smart Grids & Smart Meters and is an acknowledged knowledge source for cyber-security in respect of radio networks.

JRC Responses

Question 1: (Section 3) Do you agree with our proposal for a single authorisation approach for new users to access the three shared access bands and that this will be coordinated by Ofcom and authorised through individual licensing on a per location, first come first served basis? Please give reasons supported by evidence for your views.	Confidential: N In general, JRC agrees with a single authorisation approach for these bands and that the licences should be co-ordinated by Ofcom and issued on an individual licensing per location. JRC is encouraged by Ofcom's intervention to facilitate market access to bands where spectrum has not been deployed / utilised on a geographic basis to encourage new entry.
Question 2: (Section 3) Are there other potential uses in the three shared access bands that we have not identified?	Confidential: N No comment.
Question 3: (Section 3) Do you have any other comments on our authorisation proposal for the three shared access bands?	Confidential: N No comment.
Question 4: (Section 3) What is your view on the status of equipment availability that could support DSA and how should DSA be implemented?	Confidential: N Availability: No comment. DSA implementation: DSA as an approach would not serve the needs of the Energy Utilities because exclusive spectrum is needed.
Question 5: (Section 4) Do you agree with our proposal for the low power and medium power licence? Please give reasons supported by evidence for your views.	Confidential: N The 50m radius licence is too small for wide-area Smart Grid control system use. The 24 dBm (0.25W) in 10 MHz EIRP will be insufficient for wide-area point to point fixed links utility systems but may be sufficient for short links. The proposed restrictions therefore exclude these frequency bands from being relevant to the characteristics of deployment of critical operational telecommunications networks within the Energy Utilities.

	Licensing this spectrum within 50 km x 50 km geographical areas on a long-term exclusive basis may be more suitable for the deployment of critical operational telecommunications networks within the Energy Utilities.
Question 6: (Section 4) Are there potential uses that may not be enabled by our proposals? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 7: (Section 4) Do you agree with our proposal to limit the locations in which medium power licences are available? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 8: (Section 4) Do you have other comments on our proposed new licence for the three shared access bands?	Confidential: N JRC agrees that all fixed stations should be licensed. JRC recommends that all mobile and nomadic stations should be limited to an agreed service area and out of area emission limits should also be defined in order to prevent interference to adjacent service areas.
Question 9: (Section 4) Do you agree that our standard approach to non-technical licence conditions is appropriate? Please give reasons supported by evidence for your views.	Confidential: N The proposal that 'the licence is for an indefinite duration …' is appropriate for utility system requirements. However, the Ofcom presentation suggested an initial period of only three years; with the possibility of the existing licensee requiring access to their spectrum before then. This highlighted a real risk that access to these bands could be short-term only. It also highlighted that the initial licence fee may be unregulated after the three-year period when the existing licensee then negotiates the on-going fee. JRC is concerned by the statement made within Paragraph 4.23: 'Licences issued by Ofcom are not exclusive ….' JRC pays a premium fee, e.g. double, for exclusive access to spectrum within certain other bands. Is Ofcom intending to introduce a policy of licencing additional users within other bands that have exclusive users?

Question 10: (Section 4) Are you aware of any issues regarding numbering resources and Mobile Network Codes raised by our proposals which we have not considered here?	Confidential: N Not applicable.
Question 11: (Section 5) Do you agree with the proposed technical licence conditions for the three shared access bands? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 12: (Section 5) Are there other uses that these bands could enable which could not be facilitated by the proposed technical licence conditions? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 13: (Section 5) Do you agree with our proposed coordination parameters and methodology? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 14: (Section 5) What is your view on the potential use of equipment with adaptive antenna technology (AAS) in the 3.8-4.2 GHz band? What additional considerations would we need to take into account in the technical conditions and coordination methodology to support this technology and to ensure that incumbent users remain protected?	Confidential: N JRC does not anticipate the adaptive antenna technologies being relevant to the needs of the operational telecommunications networks of the Energy Utilities.
Question 15: (Section 5) Do you agree with our proposal not to assign spectrum to new users in the 3800-3805 MHz band and the 4195-4200 MHz band?	Confidential: N No comment.
Question 16: (Section 6) Do you agree with our fee proposal for the new shared access licence? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 17: (Section 7) Do you agree with our proposal to change the approach to authorising existing CSA licensees in the 1800 MHz shared spectrum? Please give reasons supported by evidence for your views.	Confidential: N No comment.
Question 18: (Section 8) Do you agree with our proposal for the Local Access licence? Please give reasons supported by evidence for your views.	Confidential: N JRC is concerned that Ofcom may be intending to introduce a general policy of licencing additional users within existing exclusively licensed spectrum. If so, where spectrum is deployed for operational telecommunications systems that serve Critical National Infrastructure, those frequency bands should be excluded from this policy intervention, i.e.

	avoiding having the issue of the Tenant in the first place who would subsequently need to be displaced.
Question 19: (Section 8) Do you have any other comments on our proposal?	Confidential: N No comments.
Question 20: (Section 8) What information should Ofcom consider providing for potential applicants in the future and why would this be of use?	Confidential: N No comment.
Question 21: (Section 8) Do you agree with our proposal to have a defined licence period and do you have any comments on the proposed licence term of three years?	Confidential: N A defined licence period is fundamental to enabling new market entry and to underpin the investment to facilitate service deployment. The proposed minimum term is inadequate to stimulate the market developments being encouraged by Ofcom as it does not afford sufficient security of access for new operating models to become established. Whilst in the case of the Energy Utilities any deployments to serve critical operational control capability would be on a long-term basis and hence a minimum term of ten years with no early breaks would be required to facilitate the necessary investment. Moreover, JRC notes the risk that the existing licensees may need access to their spectrum within the suggested minimum three years term which fundamentally undermines the notion of a licence term and likely renders the proposed approach un-investible
Question 22: (Section 8) Do you have any other comments on the proposed Local Access licence terms and conditions?	Confidential: N No comments.
Question 23: (Section 8) Do you agree with our fee proposal for the new local access licence? Please give reasons supported by evidence for your views.	Confidential: N The initial fees appear reasonable for a 10 MHz channel when compared with the similar fee for a 12.5 kHz narrow band business radio channel.