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What additional details do you want to keep confidential?:

No

If you want part of your response kept confidential, which parts?:

Ofcom may publish a response summary:

Yes

I confirm that I have read the declaration:

Yes

Additional comments:

Question 1: What other developments, in addition to the international and public sector developments we have identified, are relevant to our identification and assessment of options for release? :

The FCS considers that the 870-921MHz band could well represent a potential opportunity to derive considerable value for the UK with the deployment of SRD, RFID and later, ER-GSM or other replacement mission-critical or safety-related radio communications providing suitable arrangements for joint occupancy can be defined.

The FCS is concerned that interference avoidance measures may themselves be the cause of inefficient use if specified in a sub-optimal way.

Example: A typical collision-avoidance strategy will demand that equipment that is attempting to establish a new communication will first test the radio spectrum it proposes to use. If another user is already using that particular spectrum in a relevant location, the equipment will seek another part of the band which is not occupied. This strategy has two main outcomes:

1. That there is a delay before transmission starts during which the spectrum is tested or another area of the band identified.
2. In congested situations the communication may not be initiated at all but, due to geography, it might have been that a communication could have been sustained.

In the 5GHz bands the collision-avoidance specifications are now extremely complex and give rise to considerable operational difficulties.

The FCS particularly notes that GSM-R has a safety-related role and it is expected that ER-GSM or its replacement will also be used to support such communications. It would therefore appear essential that whatever interference avoidance mechanism is used, any rail applications that are deployed will, at all times, take priority. This may result in difficulties for other services when trying to maintain an acceptable level of service, particularly in the vicinity of rail infrastructure.

The FCS concludes that one of the most challenging considerations involved in the opening of this band could be the specification of the interference control mechanism. The effect of this mitigation could be:

- a. To limit the nature of the services that can be deployed in the band under the licence-exempt terms. The FCS notes that services that can use time-independent, slow links could be almost unaffected by the mitigation requirements in terms of the effectiveness of the provision of that service whereas other services may simply not function at all.
- b. To affect the price of the equipment seen by the consumer
- c. To reduce the opportunity to achieve scale economies

The FCS further notes the recent work from DECC indicating the high value of Home Area Networks (HANs) in their role as a critical part of the smart metering policy objective. The DECC figure for the value of smart metering is given as over £15B and as such appears to be the highest value use for the spectrum for the Licence Exempt uses considered.

Question 2: Do you have any additional information or analyses that could help to inform our assessment of the value that could be created through different uses of the spectrum?:

As a Trade Association with members having a wide range of interests, the FCS is unable to comment on this question in relation to matters where members have differing views.

However, the FCS notes that DECC have recently produced information in relation to smart metering. These are summarised as follows:

Key Points

- The Home Area Network (HAN) is a critical part of the rationale for smart meters.
- DECC has identified the 870-876MHz spectrum as the most suitable band for the HAN
- The Ofcom consultation confirms that there remain some uncertainties and unresolved issues relating to the 870-876 MHz spectrum.
- The figures quoted by DECC indicate that the HAN will support the smart metering which they value at £15.83B in benefits. This appears, from the Ofcom consultation, to place the HAN as the highest value licence-exempt use for this spectrum.

Detail

- The HAN is a critical part of the rationale for smart meters
 - o DECC's 2011 Impact assessment on "Smart meter rollout for the domestic sector" (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42740/1485-impact-assessment-smart-metering-implementation-p.pdf) identified £15.83bn of total benefits from smart meters. Of this, just under a third (£4.63bn) was consumer benefit.
 - o That impact assessment identifies the consumer benefit coming from "a reduction in overall energy consumption as a result of better information on costs and use of energy which drives behavioural change."
 - o This information will only be provided to the users if the HAN functions as expected.

- DECC identified the 870-876MHz spectrum as the most suitable band for the HAN
 - o DECC's SMETs consultation noted that using 2.4 GHz spectrum would not meet the needs of the HAN.
 - o It is also not yet clear whether operating the HAN in the 2.4 GHz band is compatible with the MoD planned auction of the adjacent spectrum at 2310-2400 MHz (<https://www.gov.uk/sharing-defence-spectrum>).
 - o In any event, DECC suggests that the 2.4 GHz spectrum will have to be supplemented with at least 868-870 MHz, probably 870-872 MHz and potentially all of 870-876 MHz. (Para 51 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42953/6129-consultation-second-version-smets.pdf)
 - o Therefore Ofcom needs to ensure that the 870-876 MHz band is allocated in a way that ensures that the HAN can operate effectively and reliably.

- There are still significant uncertainties and unresolved issues relating to the 870-876 MHz spectrum.
 - o MoD have not yet publicly stated what they will do with the spectrum at 870-872 MHz and 915-917 MHz but expect to decide during Q1 2013 (Ofcom Consultation Para 5.2)
 - o DECC is currently carrying out work looking at access to 870-872 MHz for the HAN and plan to give their view on this in Spring 2013 (Paras 131 and 51 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/68902/smart_meters_equipment_technical_spec_2_consultation_response_part_1.pdf (the "SMETS Statement")).
 - o Further to this, the Communication Hub Technical Specification is planned to be notified to the European Commission in autumn 2013 and this will finalise the outstanding matters relating to the design and operation of communications hub. (SMETS Statement Para 26).
 - o In light of this uncertainty over the spectrum and technical specifications of the communications hub, it is too early to assume, as Ofcom does (Ofcom Consultation Para A5.39), that the Smart Metering deployment in 870-872 MHz would be in line with the relevant technical standards.
 - o Ofcom note that the European CEPT technical compatibility report will not be available in draft until March 2013 (Ofcom Consultation Para A5.40). Even after this draft is published,

CEPT will not finalise these recommendations until autumn 2013 (Ofcom Consultation Para 5.2). Therefore it is not possible to know now whether or not some of the proposed services are technically possible. In particular until the trade offs that need to be made (Ofcom Consultation Para A5.46) are understood it is unclear which services may be deployed and how.

- Ofcom should allocate the 870-876 MHz exclusively to the HAN given it is the most pressing, high value use for this spectrum.

o The HAN is of critical importance to the success of the whole smart metering project and, as Ofcom note, licence exemption decisions are unlikely to be easily reversible (Ofcom Consultation Para 4.10). Therefore, the correct decision must be made at the first attempt.

o In light of the consumer benefits of the HAN identified by DECC, Ofcom should ensure it is allocated sufficient radio spectrum to ensure that the specific quantified benefits of the Smart Metering programme can be realised.

o There will be significantly greater clarity on all of the international and domestic issues over the next year at which point Ofcom can consider whether other services can also be accommodated.

Question 3: Do you agree with our proposal to release 870-876 MHz / 915 -921 MHz for licence exempt SRD and RFID applications if Government releases 870-872 MHz / 915-917 MHz? :

Yes. However, the FCS refers to the response to question 1 in relation to the essential need to resolve the issues surrounding interference mitigation strategies.

The FCS also notes the documents from DECC that indicate the very high importance of the HAN in the smart meter sector. From the figures available, this appears to be the highest-value licence-exempt service and should therefore be assured of adequate spectrum provision.

Question 4: Do you agree with our proposal to release 872-876 MHz / 917-921 MHz for licence exempt SRD and RFID applications if Government does not release 870-872 MHz / 915-917 MHz? :

The FCS considers that whilst it is obvious that the denial of 2x2MHz from the overall opportunity would be disappointing, the remainder still represents a worthwhile amount of spectrum that might provide considerable value.

However, The FCS does note that the loss of the government 870-872MHz // 915-917MHz segment means that the proportion of radio spectrum that must be heavily protected in the event that ER-GSM is deployed is correspondingly greater. This could affect services that would employ a back-off strategy, treating parts of the overall range differently. The FCS considers it likely that areas of the band where ER-GSM will not be deployed could have lesser interference mitigation requirements than those areas where ER-GSM may be deployed in the future. The services that could be supported in those bands could well be different.

It is also a matter of concern that the loss of the Government spectrum could imperil other important policy objectives such as smart metering.

Question 5: Do you have a view on the sequencing and timing of Ofcom's next steps if the spectrum is released for licence exempt SRD and RFID applications?:

As noted above, the FCS considers the key question to be the effectiveness and efficiency of the interference avoidance specification.

In consequence, the FCS would propose that the release time-scale be developed around the creation of suitable, mitigation strategies for this band. If this matter is left unresolved, no-one can place any realistic values on the services that can be supported except for those services that, by their very nature, are expected to be able to tolerate interruptions which may be of significant duration.

In the likely event that a suitable interference avoidance specification is not forthcoming, the FCS proposes that the policy is re-considered. In the meantime, important deployments are considered on a case-by-case basis.