## Cover sheet for response to an Ofcom consultation

### BASIC DETAILS

Consultation title: **The way forward for the future use of the band 872 - 876MHz paired with 917 - 921MHz**

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Representing (self or organisation/s): Self and Tyco Sensormatic

Address (if not received by email):

### CONFIDENTIALITY

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| Nothing | X | Name/contact details/job title | |
| Whole response | | Organisation | |
| Part of the response | | If there is no separate annex, which parts? | |

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Name Ian Brooker Signed (if hard copy)

| Responses to OFCOM Consultation<br>**The way forward for the future use of the band 872 - 876MHz paired with 917 - 921MHz** | |
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| General comments | In recent years, the use of UHF SRD has significantly expanded to meet a wide range of different applications. This has been helped by the provision of spectrum around 866MHz.<br><br>Experience has indicated that the bandwidth allowed in the 866MHz band has limited the use, however, in the key area of product item level tracking. At the moment only 200kHz channels are possible and the critical challenge at item level is to read high volumes of tags in a short period of time (in the time taken to move/drive a pallet or box of tagged items through a portal). This is referred to as a dense tag environment. Although technical progress has been made to maximise the tag reading potential within the currently allowed bandwidth, the real improvement on performance is to read the tags faster which means increasing bandwidth. In situations where tags move through a reading area read throughput is absolutely critical.<br><br>In the other scenario where tags are essentially stationary on retail shelves, there is more time available to read each tag (relatively speaking). However in this case the challenge is the number of read points needed to provide the reads with maximum positional integrity. In such cases each read point reads less tags bit the combination of the number of read points and the number of total tags is still a major challenge which stretches the available spectrum to its limits and beyond. Again having increased bandwidth available will enable faster reading at any one location and thus faster reading over the whole area covered by the read points. This is important when “real time” product movement is needed, such as when products are removed from shelves and don’t make it to the point of sale (i.e. for EAS/antitheft style applications). It’s not sufficient in this application to make inventory style counts with mobile read points a few times a day.<br><br>In theory doubling the bandwidth doubles the read throughput. This is not generally achievable in practice but a 1.5x, or more, |

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| | improvement is possible at double the bandwidth so with the potential in the 917 - 921 MHz band on 4 channels, considerable improvement is potentially possible even with low output sub sections between the 4 channels for tag data return and to allow general SRDs and other applications to co-exist.<br><br>The other major benefit of moving applications from the 866MHz band to the possible 917 - 921 MHz band is that it matches better with other allocated bands in other parts of the world where there is already good utilisation of UHF RFID. Currently this is not the case and the tag does not operate at peak performance or has additional costs to improve the performance.<br><br>This is important as tag construction means either you have one sub-optimized tag, which means the tag must be larger, or you need different tags for the different regions. The larger tag costs about 1-2 pence per tag more. The different tag solution is a similar, or greater, cost since it requires suppliers of tags and of tagged products to keep two inventories, which costs them more money, probably more than 2 pence per tag. The other issue is it is not possible to divert product shipments or redeploy inventories without retagging, which is not cost effective. It costs more to tag the product than it does to purchase the tag in most cases when replacing tags. |
| **Question 1:** Do you believe that the uses listed in this section (Section 3) are possible candidates of the 872/917 MHz bands? | There are different possible uses for the bands, and it is appreciated that an auction is a possible scenario. The use of the 917 - 921 MHz band for SRDs and RFID would provide a wider and more effective use-base than auctioning to a single user. |
| **Question 2:** Are there additional applications/services (not listed above (from Section 3) that could make viable use of the 872/917 MHz bands that Ofcom should be aware of? | Please see ETSI SRDoc TR 102 649-2 |
| **Question 3:** What services do you believe should be authorised to use this band? Could you supply relevant information supporting your preference and include any economic data relating to the value of the spectrum in providing these services? | ETSI made some co-existence tests and these should be taken into account in the technical parameters. Please see the general comments in this document for some not technical benefits. |
| **Question 4:** Do you agree with the methods | |

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| used to assess the potential to interfere with adjacent band services in a full licensed approach? | |
| **Question 5:** Do you consider that the proposed technical licence conditions would be justified and appropriate? | The most appropriate conditions should be the minimum necessary to ensure effective use of the spectrum. For RFID/SRD use a light licensing approach or licence exempt approach should be al that is needed. |
| **Question 6:** Do you agree with the methods used to asses the likelihood of services interfering with adjacent band services under the light regulatory approach? | There are many different mitigation techniques possible and again a "minimum necessary" approach should be taken which could be different for different use applications in the band.<br><br>ETSI has made feasibility studies which demonstrate that coexistence between GSM (-R) and SRD, for example, is possible with duty cycle mitigation. |
| **Question 7:** We would like stakeholder views on the cost and performance impact of the UMTS900 filters described above. | |
| **Question 8:** Are there are any other methods that would give the same protection as the filters? What costs and performance impacts would these have? | |
| **Question 9:** What are your views on the need for and justification of such mitigation measures and how their cost should be borne? | |
| **Question 10:** Stakeholders views are sought on whether the spectrum should be awarded as a single lot by frequency, or whether it should be split in to smaller frequency lots. | The two bands could be allocated separately. Availability of the 917 - 921 MHz band on its own would provide the described benefit for RFID applications. |
| **Question 11:** We would like stakeholder's views on whether the packaging should be split GB/NI or if we should proceed with UK wide packages. | It should be a UK wide package. |
| **Question 12:** Would it be practical for RFID users and adjacent operators (e.g. GSM, UMTS, GSM-R) to co-ordinate locally on a case by case basis? The answers to this will help Ofcom develop its views on whether a database would be required. | The ETSI tests showed that some distance protection was needed near GSM-R base stations and this type of coordination should be perfectly feasible, together with localised shielding etc in RFID applications. |
| **Question 13:** Do you agree with Ofcom's preliminary proposal that the separation distances suggest a light licensing regime if SRD/RFID use in this band were to be supported? If not, how should the interference into adjacent bands be managed? | If there are effective mitigation techniques used then frequency protection bands and separation distances can be minimised and even eliminated in many cases. |