

## 4G/TV Co-existence Oversight Board Meeting: 24 November 2016

### Chair's report to Ministers and Ofcom

#### Attendees

David Hendon, Chair	Sue Ramroop (DCMS)
Paul Rosbotham (Vodafone)	Andrew Dumbreck (Technical Advisor)
Robin Vernon (O2)	Michelle Brownrigg (DUK)
Inge Hansen (EE)	

Dave Darlington (BBC)

#### Apologies

John Ballard (Arqiva)  
William Webb (Non-Executive)  
Ben Roome (DMSL)  
Nick Munn (DCMS)

Alan Boyle (BBC)  
Alexandra McNair (ITV)  
Philip Milton (Channel 4)  
Mark Caines (Ofcom)

#### Via teleconference

Erol Hepsaydir (Three)  
Alberto Fernandes (Ofcom)

Ian Dewhurst (DCMS)  
Roger Darlington (Non-Executive)

## 1. Executive Summary

- 1.1 There were 17,504 confirmed cases of 4G interference at 800MHz as of the end of October 2016. The levels of interference remain within the revised estimates, based on actual experience, made by at800 in 2014.
- 1.2 All KPI targets were met in October; all 562 confirmed 4G interference cases were resolved within the 10 working day target, achieving a 100% pass rate.
- 1.3 The 700 MHz Clearance Programme Board (CPB) offered initial views of the potential adverse impacts of the programme upon the 800 MHz mitigation scheme and the support required to prevent the risks of disruption occurring.
- 1.4 With consideration of this feedback and the remit of the Oversight Board to monitor the scheme performance within the KPI framework, the Board agreed that, on behalf of the 700 MHz CPB, DCMS should engage directly with DMSL to ensure the appropriate support is provided as and when it requires. DMSL is to report its view of the risk of clearance events impacting the co-existence mitigation programme and steps taken to address these risks in its regular reporting. In addition, any assistance that DMSL is able to provide to the 700 MHz clearance programme is for discussion between them and the CPB via DCMS. Any subsequent discussions on cost implications and possible reimbursement procedures are for the DMSL Board and its shareholders. DCMS will report the Oversight Board decision to the 700 MHz CPB at their next meeting in December 2016.

- 1.5 The Coexistence Oversight Working Group submitted their final report on Cluster Prediction and recommended a method for DMSL to apply to their post-prediction modelling processes to assist in the identification of masts that might cause above-average numbers of reported interference, which may help with resource planning. DMSL will consider further.

## 2. at800 update

### Roll-out

- 2.1 As of the end of October, there were 17,504 confirmed cases of DTT interference caused by 4G at 800MHz, including the 35 cases found during the pilots conducted in 2013.

### Mast Analysis

- 2.2 The numbers of cumulative cases reported within 28 days of mast activation were static between August and September for both distances of 900m and 1.5km at 0.32 and 0.43 respectively. For monthly cases, the number of cases reported within 28 days slightly increased with 0.22 in September (from 0.18 in August) for 900m and 0.31 (September) from 0.22 in August for 1.5km.
- 2.3 The trend in the declining average number of cumulative cases per active mast continues with 1.15 in October from 1.16 in September. The rolling average of confirmed cases per activated mast across a three-month period to October decreased substantially from 1.18 in September to 1.10.

### Installer Scheme and Audit Summary

- 2.4 There have been 44,190 engineer visits to unique addresses, from an overall total of 48,726 engineer appointments of which 2,922 have been subject to audit.
- 2.5 There were 1,945 visits originally scheduled to take place in October; the majority, 1,835 were undertaken and closed as arranged; 5 visits were rearranged by at800 to meet capacity restraints and the remaining 105 were cancelled by the viewer. Over 95% of the completed appointments took place within the three working day target.
- 2.6 A total of 86 audits were completed in October for engineer visits originally undertaken in September (33) and October (53), with 34 different engineers audited across the three regional contractors.
- 2.7 The October audits focused on teams where issues had been seen previously. Through a combination of approaches and tools, including the reinforcement of

required practices and new equipment, an expectation was set that performance would improve. The results of audits already conducted in the first two weeks of November are that there has been a positive effect already.

- 2.8 Of the October audits, there were five overturns in total: four from 4G to non-4G, which were due to engineers missing faulty elements in the aerial systems, not replacing suspect meter cables and incomplete filter checks to confirm diagnosis. There was one overturn from non-4G to 4G in which the engineer missed high 4G levels due to oversights caused by improper haste. There were four form-completion errors, all from 4G to non-4G.
- 2.9 All overturns have been raised with the respective regional contractor management teams.

### Communications

- 2.10 In June, at800 adapted the 'raising awareness' communication strategy which includes contacting local councillors, MPs, local authority and communal housing providers and using local media and social media, to target areas based on imminent mast forecasts. This proactive approach supported the current revised mailing trial to ensure that those viewers identified as at potentially at-risk of DTT interference are notified/aware of the issue nearer the time of a mast actually activating.
- 2.11 An analysis of the proactive communications approach between June and September 2016 showed that whilst 33% of articles appeared within one to two weeks of the mast activating (and 28% of articles appeared in the week before activation was forecast), 53% of forecast masts did not activate within seven days of their forecast date, 28% of masts activated more than 30 days after their forecast date and 18% of masts forecast to activate during the three-month period were yet to activate in towns where awareness-raising activity had taken place.
- 2.12 As mast activation can never be forecast with 100% accuracy, it is evident that in some locations awareness is raised unnecessarily. In addition, it is more difficult for the communications team to secure further media coverage in these areas when masts do activate at a later point than forecast or planned.
- 2.13 In light of this, at800 is updating its approach and from the end of November will run all communications activity post-activation in the week after the masts have activated which will prevent awareness being raised unnecessarily or a long time in advance of actual mast activation.

### 3. KPI Report

- 3.1 at800 reported passes against all KPIs in August. All 562 confirmed 4G interference cases were resolved within the ten working day target, achieving a 100% pass rate for KPIA1.
- 3.2 The Board recognised that at800 have achieved passes on all KPI's and SLA's since July 2015 and offered their commendations to the whole organisation for this accomplishment.

### 4. 700 MHz clearance programme and the 800 MHz mitigation scheme

- 4.1 At the September 2016 Board meeting, DMSL raised a concern that the DTT frequency changes generated by the 700MHz Clearance Programme could affect its ability to predict interference, ensure sufficient resource to meet demands and, therefore, provide effective mitigation support to those viewers affected by 4G signals at 800MHz.
- 4.2 The Board agreed that representatives from Arqiva, BBC, DUK, DCMS and Ofcom should meet with DMSL to discuss what information would be needed, how often it should be shared and when.
- 4.3 Further to my separate discussion with the Chair of the 700 MHz Clearance Programme Board (CPB) regarding this particular concern, it was agreed that instead of the meeting, a paper outlining the impacts and proposals on how to address the issues would be considered by each Board with a view to reaching a consensus on next steps.
- 4.4 DCMS reported that at the 700 MHz CPB in mid-November, there was agreement that the programme should not negatively impact upon the 800 MHz mitigation scheme and that support will be given to alleviate potential issues. It was also recognised that given the available resource and quality of the viewer support currently provided by at800, there may be opportunities for collaboration in reducing issues for DTT viewers affected by the 700 MHz clearance and, as an additional benefit, costs for both programmes.
- 4.5 The 700 MHz CPB also noted that the responsibility of ensuring that there are no impacts on the 800 MHz mitigation scheme, or even reducing the likelihood of the impacts or effects should they materialise, should be shared with the 4G TV Coexistence Oversight Board and that some of the stakeholders represented on the

Oversight Board will need to take ownership of some of the actions and recommendations to ensure that at800 can continue to meet its KPIs.

- 4.6 The Oversight Board considered the feedback from the 700 MHz CPB. The remit of the Oversight Board is to monitor performance of the mitigation scheme, ensuring that television reception issues experienced by primary DTT viewers due to 4G mobile signals at 800 MHz are resolved within the agreed KPI framework. Any impacts upon the ability of the operation, including related costs, are a matter for the DMSL Board to consider and ensure that steps are taken to safeguard at800 in achieving the provision of the mitigation support and performance measures within approved budgets and spend.
- 4.7 With these considerations, the Oversight Board agreed that DCMS, on behalf of the 700 MHz CPB, should engage directly with DMSL on both the support required to reduce or eradicate any adverse impacts of the clearance programme upon the at800 mitigation operation and any assistance that at800 may be able to provide to the 700 MHz clearance programme. Any discussions on at800 costs and possible reimbursement procedures are for the DMSL Board and its shareholders.
- 4.8 DMSL is to report its view of the risk of clearance events impacting the co-existence mitigation programme and steps taken to address these risks in its regular reporting to both the DMSL Board and the Oversight Board.
- 4.9 DCMS will relay the decisions of the Oversight Board to the 700 MHz CPB at their next meeting in early December 2016.

## 5. Coexistence Technical Working Group (CTWG): Cluster predictions

- 5.1 Since the beginning of the year, the Coexistence Technical Working Group (CTWG), has been investigating why some masts have a higher number of interference cases than normal, an effect known informally as 'clustering', with an objective to propose how such masts might be identified in advance, thereby enabling at800 to effectively plan and manage resources at the point of activation.
- 5.2 In July 2016, the CTWG provided an interim report to the Board with their initial findings which indicated that clusters tend to occur in suburban areas/small towns with semi-detached or terraced housing where there is a combination of high degradation, low DTT field strength and an available 6 multiplex (MUX) DTT transmission.

- 5.3 At the November 2016 Board, Andrew Dumbreck, Technical Advisor to the Board, presented the CTWG's final report that, as well as reiterating the initial findings, outlined the extensive work undertaken by the group and recommended the methodology that DMSL/at800 might wish to adopt to identify potential clusters within forecast mast activations.
- 5.4 As the methodology involves complex calculations based on particular criteria including clutter information associated with the UK planning model and population and percentage location degradation, which are intended to be applied to the prediction data as part of post-processing, there are no changes required to the computer model itself. DMSL will consider the recommendation further, including implementation.
- 5.4 DMSL recognised the work and efforts of the CTWG, which the Board echoed, and thanked the group, with particular credit to Chris Nokes and Kostas Tsioumparakis for their contributions.

## 6. AOB & Next Meeting

- 6.1 The next formal discussion will take place on Thursday 26 January 2017.
- 6.2 The Board will review the current bi-monthly roster in early 2017 with consideration of reducing the frequency of meetings and/or increased use of teleconference facilities so members do not have to travel unnecessarily.

David Hendon

Chair

4G/TV Co-existence Oversight Board