PA CONSULTING GROUP

UNDERSTANDING THE LIKELIHOOD AND EXTENT OF RF INTERFERENCE CAUSED BY IN-HOME PLT DEVICES

Meeting No 2: Full Team Progress Meeting

Riverside House, London

Tuesday 20th October 2009
10:30 - 11:30hrs

MINUTES OF MEETING AND ACTIONS ARISING

Note: The following people have actions against them in the minutes: please read these minutes and ensure you carry out your actions in a timely fashion: PA

Item	Action Leader	Action by

ATTENDEES

The following attended the meeting:

- Ofcom (Programme Manager)
Ofcom (Spectrum Policy group)
Ofcom (Investigation Policy Manager)
Ofcom (International Broadcasting Co-ordination)
Graham Warren (GW) – Ofcom (Head of Broadcast Technical Policy)
(Partner in Charge)
(Scenario definition and technical analysis)
(Scenario definition and technical analysis)

Apologies were received from

The planned meeting start time was 10:00 but was delayed until 10:30 by a fire alarm.

GENERAL

The meeting followed the attached slide set "FHQ-09-0034-OP_A Ofcom Progress Meeting 20-10-09"

These slides summarised the "work in progress" final report sent to on 17/10/09 with the main aim of the meeting being to check the overall approach and direction of the study so far.

ıighlighted that these results are subject to review and change but give an indication of the direction of the study so far.

1. UPDATE OF PROGRESS AGAINST PROJECT PLAN

ɔresented on update on progress against the project plan. This showed remaining work to complete the study to be:

- Complete modelling of interference scenarios
- Complete sensitivity analysis of results and draw conclusions on interference mitigation techniques
- Restructure final report to reduce the size of the main body and make top level conclusions clearer

2. SUMMARY OF THE FINAL REPORT AND FINDINGS TO DATE

Julie presented a summary of the "work in progress" final report as per the attached slide set "FHQ-09-0034-OP_A Ofcom Progress Meeting 20-10-09".

3. FEEDBACK AND DISCUSSION OF THE FINAL REPORT

Questions and feedback were interspersed with item 2 as follows:

- asked if smart notching had yet been proven. ındicated that ETSI had undertaken a plugtest with Sony and shown smart notching to be feasible for SW radio signals. was concerned about detecting very low power victim signals such as in amateur radio bands. indicated that as amateur radio bands are usually notcned by default in PLT devices there is no need to apply smart notching to these.
- ; ɔommented that ITU-T SG15 were looking at notching in PLT devices and were proposing increasing the power outside the notches to maintain the data rate. pointed out that as well as the direct power increase this could reduce the notch depth due to intermodulation.

Action: PA final report should comment on the feasibility of smart notching for different victim receiver types and any adverse effects that this may cause outside the notched region. **PA** **06/11/09**

- asked if the fact that Sony owned the IP for smart notching would inhibit this technique being mandated in standards. indicated that while this complicates the issue, it is a fairly standard situation in standards like 3GPP that vendors will own IP that is essential to implementing

that standard. In this case ETSI have arrangements with such vendors that they will licence their IP at a fair cost so that royalty fees do not prohibit other vendors from implementing the standard. Something similar could perhaps be done for smart notching in PLT.

Action: PA final report should include comments on how IP related to smart notching could be handled if smart notching was mandated in standards. **PA** **06/11/09**

was concerned that PLT devices offering 1Gbps data rates were operating up to 300MHz and asked if the PA study was considering victim receivers above 30MHz. clarified that the study only looked at victim receivers from 2-30MHz as EMC regulations are much clearer and stricter above 30MHz and equate to a drop in injected power from PLT devices of 30dB. After some debate it was agreed that PA would think about how much extra work it would be to consider systems above 30MHz and report this to as an option for extending the current scope.

Action: PA to consider extra work involved in including victim systems above 30MHz and report this to as an option for extending the current scope. **PA** **06/11/09**

was keen that the criteria for assessing interference should be based on the rise in the background noise level caused by the PLT devices. explained that the interference criteria in PA's model is based on a 3dB rise in the background noise level with the noise levels taken from ITU-R P.372 for radio amateurs and professional users and on broadcasts planning guidelines of 3.5uV/m for SW radio listeners. This approach was accepted.

and Graham were keen that interference from PLT devices was not simply modelled as an AWGN interference source but that the effect of receiving an OFDM signal in a narrowband victim receiver was taken into account. and clarified that the study had looked at results from the UWB community who also use a wideband OFDM signal and have examined the effect of UWB on a narrowband receiver. In the worst case scenario the UWB signals acts as an impulsive noise source and worsens performance by 2dB. This has been taken into account in calculating the interference criteria in the study.

Action: PA final report to show clearly how the effects of receiving a wideband PLT signal in a narrowband victim receiver are accounted for in the simulation model. **PA** **06/11/09**

ndicated that the "work in progress" report would be reworked to reduce the main body and more clearly draw out the top level conclusions. In addition the modelling results would be added to this once the issues with Seamcat were resolved. indicated that he would prefer to wait until the reworked draft report was available before circulating it within Ofcom for comment.

Action: PA to refine "work in progress" report and provide a draft final report to for review by Ofcom.	**PA**	**06/11/09**

4. ANY OTHER BUSINESS

With nothing further to discuss the meeting closed at 11:30