

Noetica advice sheet- Managing AMD False Positives

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Version Control

Version	Author	Comments	Date
1.0	D.Singer	First version	07/01/10

Synthesys Hard Dialler FPR rate

The latest Ofcom policy statement regarding the misuse of predictive dialling equipment advises that providers of such equipment should supply a “reasoned estimate” of the False Positive Rate (FPR) of AMD as a percentage of all live calls.

Noetica has therefore undertaken the necessary steps to provide a reasoned estimate of its hardware based dialler (built around Aculab boards). Noetica is not required and indeed not in a position to provide any FPR figures for its software based dialler as this uses customer owned telephony equipment to perform Call Progress Detection and the Noetica software simply responds to these detection signals. Therefore, Noetica recommends that users of its software based dialler should consult their PBX supplier to obtain these figures.

The FPR for Noetica’s Synthesys™ hardware based dialler is estimated to be: **0.5%**.

Here is the reasoning behind this figure based on realistically large statistical samples and lab experimentation. Our experiments show that out of each 1000 calls presented to agents, the AMD algorithm would present about 5 misidentified false negatives. As it is reasonable to assume that there is equal probability for false positives and false negatives and as it is also reasonable to assume that on average about 50% of these calls (i.e. the calls presented to agents) are to live people and the rest are to answering machines we can conclude that the percentage of false positives out of all live calls is 0.5%.

These results are based on average good quality data tested in lab conditions and we must caution that these figures can vary dramatically when the equipment is used under different conditions. In a way, one should treat this figure as a “factory setting” and use experimental data to vary it according to the conditions of each campaign.

Applying FPR within Synthesys

Whether using the Synthesys hard dialler or the soft dialler connected to a 3rd Party PBX it is necessary to configure Synthesys correctly to take into account FPR. If a 3rd Party PBX is being used to provide AMD they will need to give you guidance on what FPR rate to apply.

Latest Version of Synthesys 4.1 (January 2010 on)

In the latest versions of Synthesys™ (Version 4.1 and higher) a new campaign specific parameter has been added to the system. This parameter, called “AMD false positives” needs to be set to campaign specific experimentally adjusted FPR or in the absence of such a figure to the recommended “reasoned estimate” (of 0.5%) whenever AMD is in use. The system would then use the following formula to calculate the total Abandoned Call Rate which is then kept under its pre-set value (under or equal to 3%) as required by Ofcom:

$$R = \frac{|\mathcal{D}| + (\text{FPR} \times |A|)}{|\mathcal{D}| + |A|}$$

In this formula: \mathcal{D} denotes the set of all dialler abandoned calls (i.e. live abandoned calls and abandoned false negatives) which is known and easy to measure while A denotes the set of all calls delivered to agents.

A full explanation of this formula and its derivation is provided in the document titled: “Analysis & Advice to Customers regarding Answer Machine Detection with respect to New Ofcom Statement of Policy regarding the Persistent Misuse of Dialling Equipment” published by Noetica in 2009 and attached to this update. All the information and recommendations provided in the original document are still valid. Furthermore, we were glad to see that Ofcom has now adopted our recommendation of calculating FPR as a percentage of live calls and not as a percentage of calls answered by answering machines which didn’t make sense in their original document.

Synthesys Version 3.2 and early versions of 4.1

If you are using an earlier version of Synthesys™ which does not provide the facility to use the new FPR parameter, you can still comply with the Ofcom regulations by using the Nuisance Call cap parameter when you set up and maintain campaigns by simply setting the parameter to be $(3-\text{FPR})\%$ where FPR is either the “factory setting” of 0.5 or any other value that you can derive experimentally. The latter is clearly preferable and recommended. This method is slightly less efficient than using the FPR parameter available in later versions but not significantly so.

Finally, here are some ideas on how to customise FPR per campaign. In the original document “Analysis & Advice...” published by Noetica in 2009, we provided some ideas and tips on how to produce a reasonable experimental figure for this parameter. Ofcom also provide some recommendations in their own policy statement. These are all valid methods.



In addition to these methods, here is a simple way to approximate this figure. First of all, run for a few hours (preferably a whole day) with AMD turned off and then measure the percentage of (agent identified) calls to answering machines as a proportion of all calls delivered to agents. Let's call this ratio A_M . This figure will vary wildly through the day, and this is the reason for the recommendation for a day long sample.

The following day, run for an equivalent period with AMD switched on (with the factory setting for FPR) and measure the false negatives, F_N (i.e. the calls classified by agents as answering machines) as a percentage of all calls delivered to agents. If you want to be more precise, listen to some of these calls and adjust the figure according to the number of errors (agent misidentifications) that you find.

A good estimate for campaign specific FPR would then be:

$$FPR = F_N * \frac{1-A_M}{A_M}$$

If you require any clarifications on this method or anything else relating to this subject, please contact us directly.