B. Methodology for Aircraft Noise Calculation

B.1 Calculation of annual daily average of Leq (24 hours) from sound exposure levels (SEL) data of aircraft noise events

The SEL of an aircraft noise event is the sound level, in dB(A), that would be obtained if the entire event energy were uniformly compressed into a reference time of one second. The available SEL data obtained from NMTs erected at representative locations may be used to calculate the corresponding annual daily average of Leq (24 hours) of the noise events using the following equations[3]:

$$L_{eq} = \overline{SEL} + 10\log_{10} N - 10\log_{10} T$$

$$\overline{SEL} = 10\log_{10}\left[\frac{1}{N}\sum 10^{SEL_i/10}\right]$$

where

$\overline{SEL}$ is the logarithmic average sound exposure level (SEL);

N is the number of aircraft events that occurred during the measurement period T; and

T is the measurement period in second.

Where necessary, background noise at specific NMTs during the aircraft noise events shall be quantified such that a relevant level correction may be introduced in calculating the logarithmic average SEL. The need for such background noise correction shall be reviewed as appropriate after the first year of 3RS operation.

[3] Environmental Research and Consultancy Department, Civil Aviation Authority, ERCD Report 0904, *Metrics for Aircraft Noise*, K Jones and R Cadoux, January 2009 (accessible at: https://www.caa.co.uk/publication/download/13689)