

**N-ALM NOISE SUB GROUP MEETING  
STOCKHOLM, 11th NOVEMBER 2008 9:00-12:45**

**1. ADMINISTRATION AND PRESENTATION OF THE PARTICIPANTS**

**a. Opening**

Kalle Keldusild welcomed the group and Mikko Viinikainen opened the meeting. Short introduction was made by all participants.

**b. Participants**

Participants are listed in Appendix 1.

**c. Chairmanship**

Mikko Viinikainen, Finavia

**d. Secretary**

Satu Routama, Finavia

**e. Rapporteur to N-ALM/45**

Mikko Viinikainen

**2. NOTES FROM THE PREVIOUS MEETING (Helsinki 15th November 2007)**

There were no comments to the notes of the previous meeting.

**3. ADOPTION OF THE AGENDA**

The agenda for the meeting sent out by Kalle Keldusild is in Appendix 2.

The agenda was accomplished by:

8.1 FDR and NPD curves

8.2 clear Nordic sky

8.3 NH90 measurements

**4. ACTION PLANS ACCORDING TO EU NOISE DIRECTIVE**

Satu Routama presented the action plans according to EU noise directive (END) in Finland. The action plan is done for the main airport Helsinki-Vantaa airport as a part of environmental permit application. Both of them were in public consultation at the same time. 21 statements from the authorities and 220 opinions from the citizens were given on the environmental permit application. All statements and opinions were observed in the action plan hearing process. 7 opinions (15 contacts) were given on the action plan only. Helsinki-Malmi airport action plan was not needed because of the environmental permit (15.2.2008) and the noise control plan already accomplished.

Eva Nielsen told that in Denmark Copenhagen Airport and Billund Airport have no special demands in their action plans, as the plans are referring to the environmental permit processes. In the action plan for Roskilde Airport the main issues are to

investigate whether inhabitants near the airport can seek financial support for noise insulation and also investigate whether the routing to and from the airport is optimal in relation to noise mitigation. There are 31 houses situated in Roskilde Airport noise area over 55 dB (around 2000 in Copenhagen, Kastrup). The municipality of Roskilde is still the environmental authority for Roskilde Airport.

Kåre Liasjø told that although Norway is a non-EU-member, some of the EU regulation is under the national regulation. Norwegian CAA is waiting for new, tighter regulation for operating Oslo airport. According to the present regulation nobody living near the airport should have indoor noise level over 42 dB. Noise levels have shrunk because of the MD80s are reduced.

Lars Ehnbohm presented that Swedish main theme in the action plan is that action plans cannot make any improvement, only the land-use planning around airports can. There are 4 400 people living in Arlanda airport noise area  $L_{DEN}$  over 55 dB.

Discussion about noise limits in reporting to EU (59,5-60,4 dB or 60,0 dB). Finavia has reported using bands 55-59,9.

Mikko Viinikainen agreed that END does not bring any improvement to the airports. The only benefit is comparison (between airports).

Links to the END noise mappings and action plans:

#### **Denmark**

noise mapping: <http://noise.mst.dk/>

action plan: [http://www.mst.dk/Stoej/kortlaegning\\_af\\_stoej/stoejhandlingsplaner/](http://www.mst.dk/Stoej/kortlaegning_af_stoej/stoejhandlingsplaner/)

#### **Finland**

noise mapping:

[http://www.finavia.fi/files/finavia/ymparistokuvat/EFHK\\_lentokonemelu\\_2006\\_FINAL\\_pdf.pdf](http://www.finavia.fi/files/finavia/ymparistokuvat/EFHK_lentokonemelu_2006_FINAL_pdf.pdf) and

[http://www.finavia.fi/files/finavia/ymparistoraportit\\_pdf/EFHK\\_lentokonemelu\\_2006\\_korj\\_auSPAivitys.pdf](http://www.finavia.fi/files/finavia/ymparistoraportit_pdf/EFHK_lentokonemelu_2006_korj_auSPAivitys.pdf)

action plan:

[http://www.finavia.fi/files/finavia/ymparistoraportit\\_pdf/EFHK\\_Ymparistolupahakemus\\_v\\_2.0\\_96dpi\\_06052008\\_Final.pdf](http://www.finavia.fi/files/finavia/ymparistoraportit_pdf/EFHK_Ymparistolupahakemus_v_2.0_96dpi_06052008_Final.pdf)

#### **Sweden**

noise mapping: <http://transportstyrelsen.se/sv/Luftfart/Miljo/Omgivningsbuller/>

action plan: <http://transportstyrelsen.se/sv/Luftfart/Miljo/Omgivningsbuller/>

## **5. MITIGATION OF NOISE FROM ARRIVING AIRCRAFT**

Marie Hankanen presented aircraft noise measurements of arriving aircraft with different arrival procedures. Measures were made 6,5–9,5 NM from threshold in levels 2500 ft and 4000 ft with MD82 and B736 aircraft, about 100 operations. The results do not differ almost at all in the measurement points closer the airport, but in the point 9,5 NM from the threshold the results have more difference.

Mathieu Boué told about the Aurora-project which is a Arlanda airport and SAS cooperation study about A330 green approach. Aurora defines track and profile with narrow dispersion, more specific than CDA. Non-Aurora approach has wider dispersion

(some CDA approaches). Non-Aurora causes less noise in areas far from the airport. In the study there are problems with accuracy of the coordinates, air speed and INM process.

Discussion:

- Speed control during the approach in 6-15 NM from threshold has significant effect in noise.
- In passengers point of view, CDA might be more pleasant
- long approaches might lead to the longer routes

## **6. DEVELOPMENT OF NOISE ASSESSMENT TOOLS**

INM 7.0 is in use in Sweden and Finland, NORTIM in Norway and DANSIM and INM 6 in Denmark.

The noise zones have become wider since changing from INM 6 to INM7.0a because of the new NPD table for some airplanes. Finavia has compared results with DANSIM and INM 7.0 using the exactly the same input data. The results for parallel runway operations in Helsinki-Vantaa show that INM 7.0 noise area gets wider and noise contour fingers are combined.

Lochard Scenario Builder for INM 6 and INM 7.0 is in use in Sweden. In Finavia the names of the routes by gates are manually defined and dispersion is also manually defined. The main tracks are defined by INM. In Denmark radar data is available for noise calculations. Radar profiles are used for calculations in Oslo airport and INM standard profiles in other Norwegian airports.

Kåre Liasjø told that profile generator is coming as a new tool to NORTIM. Departure and landing profiles are based on INM. Thrust calculation is based on a radar profile registration. Calculation of air pollutant emissions is based on ICAO database.

### INM and EDMS news

INM 7.0a bug is fixed and database updated. EDMS 5.1 database is updated and new parameters added. AEDT 2.0 is planned to be released in 2011 and it will replace EDMS, INM and NIRS.

## **7. UPDATES TO THE LIST “SURVEY ON BACKGROUND INFORMATION OF AIRCRAFT NOISE CALCULATION METHODOLOGIES AND PRACTICES IN NORDIC COUNTRIES, 28 JAN 2008”**

Calculation methods are listed in Appendix 3.

## **8. ANY OTHER EXCHANGE OF INFORMATION**

8.1 Kåre Liasjø told that MD80 and Boeing aircraft need to be improved to the FDR and NPD curves project. MD80 parameter is too low and Boeing is too high. More info is available from Kåre if needed.

8.2 Clear Nordic Sky project is under work at Integra Denmark. Project is about CDA optimum flight paths.

8.3 Finavia has measured NH90 military helicopters. Results are not available in public domain. Finavia thanked Kåre for help on technical background information.

8.4 Cooperation with Eurocontrol is done with

- CDA projects
- collaborative decision making in airports
- air pollution statistic calculations by Eurocontrol is under negotiation with Finavia
- environmental goals (MIME project)

8.5 Swiss education program on general aviation noise computer program. See

<http://www.bazl.admin.ch/fachleute/01169/01466/index.html>

8.6 EASAs notice of Proposes Amendment of Basic Regulations has been in commentary round. FAA Sweden and Finland commented on against it and Norwegian authorities see amendment possible.

8.7 Emissions calculation software is coming up to the TNIP family.

## **9. ANY OTHER BUSINESS**

No other business.

## **10. REPORTING TO N-ALM**

The summary of the discussion will be presented by chairman.

## **11. NEXT MEETING**

The date and place of the next meeting will be decided later.

## **12. CLOSING THE MEETING**

Mikko Viinikainen closed the meeting.

Mikko Viinikainen  
Chairman of the Noise Sub group meeting

Satu Routama  
Secretary