

SYMPOSIUM ON: The environmental noise directive END



Transposition of the directive in Northern Europe

Finland



Sweden



Denmark



Hugo Lyse Nielsen

Carl Bro Denmark



Population densities
in inhabitants per km²

Finland, Sweden: 20

Denmark: 125

Germany, UK and
France: 250

Netherlands: 500

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Overview of transpositions		Finland	Sweden	Denmark
Minimum by law and ordinance				
Extended ordinance by detailed guidelines		Evaluation later		
Extended mapping by:	1.5 m mapping altitude, ref. END art. 11.4			
	$L_{Aeq, 24h}$			
	L_{Amax}			
Mapping by adapted national prediction methods				
Mapping by the new advanced prediction method Nord2000				
Transition into EU-indicators	Road	L_{night} in use		
	Rail	L_{night} in use		
	Air			
	Industry	L_{night} in use		
Additional indicators: L_{night} or L_{Amax} to be considered				

Day-evening-night periods	Finland	Sweden	Denmark
Day	07 - 19	06 - 18	07 - 19
Evening	19 - 22	18 - 22	19 - 22
Night	22 - 07	22 - 06	22 - 07



Maps courtesy of www.theodora.com/maps, used with permission

END transposed 2004

647 (1550) km major roads

96 (236) km major railways

1 (8) agglomerations

1 major airport

**Responsible for mapping,
action planning and public
contact:**

**Road & rail administrations,
airports and municipalities**

**Responsible for data to be
sent to EC:**

Government

Finnish outside noise limit values

Outside	$L_{Aeq(7h-22h)}$	$L_{Aeq(22h-7h)}$
Residential	55 dB	50 dB
Recreation in cities	55 dB	50 dB
Institutions	55 dB	50 dB
New areas	55 dB	45 dB
Holiday settlements	45 dB	40 dB



END transposed 2004

930 km major roads

220 km major railways

3 (12) agglomerations

2 major airports

**Responsible for mapping,
action planning and public
contact:**

**Road & rail administrations,
airports and municipalities**

**Responsible for data to be
sent to EC:**

Government/EPA

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SWEDEN: Limit values expressed in terms of L_{den}

Source	Outside limit value New buildings	Outside limit value Existing buildings	L_{den}	$L_d - L_e - L_n$
Road	$L_{Aeq,24h} = 55$ dB	$L_{Aeq,24h} = 65$ dB	60 dB	
Rail	$L_{Aeq,24h} = 60$ dB		66 dB	
Air	FBN = 55 dB	FBN = 60 dB	55/60 dB	
Industry	$L_{Aeq, day} = 50$ dB $L_{Aeq, evening} = 45$ dB $L_{Aeq, night} = 40$ dB		50 dB	50 dB 45 dB 40 dB

Sweden has also outside limit values for L_{Amax}



Maps courtesy of www.theodorora.com/maps, used with permission

END transposed 2004

1.043 km major roads

434 km major railways

1 (4) agglomerations

3 major airports

**Responsible for mapping,
action planning and public
contact:**

**Road & rail administrations,
municipalities and the
government**

**Responsible for data to be
sent to EC:
Government/EPA**

DENMARK

Existing L_{den} limit values for aviation

Application of area	Airfield	Airport
Built-up areas and other noise sensitive buildings	45 dB	55 dB
Buildings in open country	50 dB	60 dB
Hotels, offices etc.	60 dB	60 dB
Recreative areas for overnight stay	45 dB	50 dB
Other recreative areas	50 dB	55 dB

Denmark has also outside limit values for L_{Amax} during the night:

70 dB for airfields and 80 dB for airports

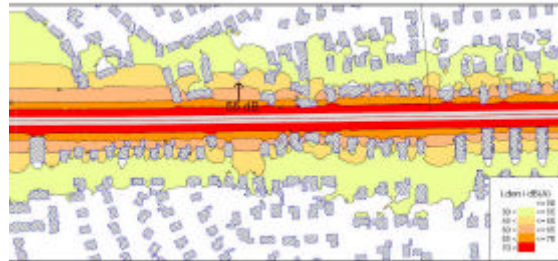
Nord2000 Noise Prediction Model

- Point-to-point prediction method for each 1/3 octave frequency band
- Source model for 3 vehicle categories
- 3 source altitudes above the pavement
- Terrain segmentation
- 7 terrain impedance classes
- 4 terrain roughness classes
- 5 meteo classes
- Co-operation with Harmonoise development

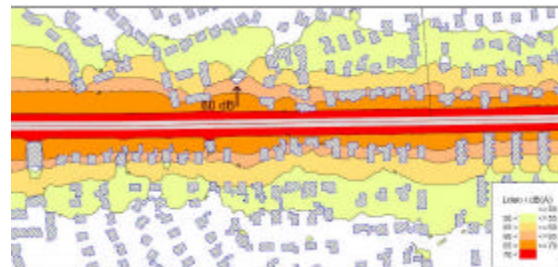
Environmental Noise Directive END Article 11 Review and reporting

- No later than 18 July 2009, the Commission shall submit to the European Parliament and the council a report on the implementation of this directive
- ...
- When the Commission has received the first set of strategic noise maps, it shall reconsider:
 - the possibility for a 1,5 metre measurement height in respect of areas having houses of one storey

City approach
road, 50 km/h
Altitude 1.5 m



City approach
road, 50 km/h
Altitude 4.0 m



SUMMARY

- END implemented in Northern Europe by law and ordinances
- Major roads: 2.620 km (first mapping)
- Major railways: 750 km (first mapping)
- Major airports: 6
- Agglomerations: 5 (later 22)
- Additional Danish implementation

Scheme for reports

Country: **FINLAND** Rapporteur: **Sirkka-Liisa Paikkala**

Has the END been transposed into national legislation?
 Yes: No: If YES, when was it transposed? **2004**

What legislative structure was chosen?
 Law: Ordinance(s): Law + Ordinance(s): Other:

What is the volume of noise mapping and action planning?

	until 2007/2008	until 2012/2014
length of major roads	647 km	1550 km
length of major railways	96 km	236 km
number of agglomerations	1	8
number of major airports	1	

Who is responsible for ...

	Government	Road administration	Railway administration	Airports	Municipalities
... noise mapping?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... action planning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... information of the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... participation of the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... data to be send to EC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Which methods have to be used to determine noise levels?
 EU Interim Methods: Official national methods:

How are noise levels determined?
 Measurement: Calculation:

Do there exist cost estimations for ...

	Yes	No	If YES, what was is the estimation?
... noise mapping?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	million Euro
... action planning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	million Euro

Remarks:

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 PO Box 35, FI-00023 GOVERNMENT FINLAND
 E-mail: sirkka-liisa.paikkala@ymparisto.fi

FINNISH REPORTING

Scheme for reports

Country: **Sweden** Rapporteur: **Ulla-Torsmark**

Has the END been transposed into national legislation?
 Yes: No: If YES, when was it transposed? **01. Sep 04**

What legislative structure was chosen?
 Law: Ordinance(s): Law + Ordinance(s): Other:

What is the volume of noise mapping and action planning?

	until 2007/2008	until 2012/2014
length of major roads	930 km	na km
length of major railways	220 km	na km
number of agglomerations	3	12
number of major airports	2	

Who is responsible for ...

	Government	Road administration	Railway administration	Municipalities	Swedish environment protection
... noise mapping?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... action planning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... information of the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... participation of the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
... data to be send to EC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Do there exist cost estimations for ...

	Yes	No	If YES, what was is the estimation?
... noise mapping?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	million Euro
... action planning?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	million Euro

Remarks:

This box can be filled with information on
 - municipalities which have already started with mapping or action planning
 - combination of combining air pollution and noise pollution issues
 - contact persons
 - etc.

SWEDISH REPORTING

Scheme for reports

Country: Rapporteur:

Has the END has been transposed into national legislation?
 Yes: No: If YES, when was it transposed?

What legislative structure was chosen?
 Law: Ordinance(s): Law + Ordinance(s): Other:

What is the volume of noise mapping and action planning?

	until 2007/2008	until 2012/2014
length of major roads	1,043 km	na km
length of major railways	434 km	na km
number of agglomerations	1	4
number of major airports	3	

Who is responsible for ...

	Government	Road Administration	Railway Administration	Airports	Municipalities
... noise mapping?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
... action planning?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
... information of the public?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
... participation of the public?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
... data to be send to EC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DANISH REPORTING

Which methods have to be used to determine noise levels?
 EU Interim Methods: Official national methods:

How are noise levels determined?
 Measurement: Calculation:

Do there exist cost estimations for ...
 Yes No If YES, what was is the estimation?
 ... noise mapping? million Euro
 ... action planning? million Euro

Remarks: