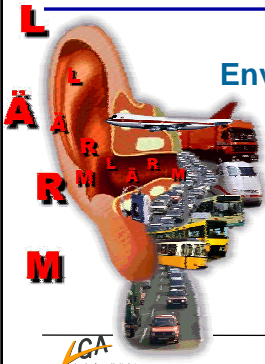


## WG 42: NOISE



### Environment and Health Aspects of Noise

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## Noise typology

- **Environmental noise**  
road, rail and air traffic  
industries, construction and public work  
neighborhood  
ventilation systems, office machines, home appliances
- **Leisure noise**  
discotheques, rock concerts, computer games, personal cassette players, Walkman-type portable compact disc players, iPod, fireworks, toys, firearms, snowmobile, motomarine
- **noise at the industrial workplace**



## Noise Environment in Europe

- about 450 million people (65% of the total population) exposed to >55dBA
- about 113 million people (17%) exposed to >65dBA
- about 10 million people (1.4%) exposed to >75dBA
- No systematic differences across Europe
- Eastern European Cities noisier than Western
- Data poor from Central and Eastern Europe



## The Main Health Risks of Noise

- pain and hearing fatigue
- hearing impairment including tinnitus
- annoyance
- interferences with social behavior (aggressiveness, protest and helplessness)
- interference with speech communication
- performance at work and/or school decrements
- sleep disturbance and all its consequences on a long and short term basis
- cardiovascular effects
- hormonal responses (stress hormones) and their possible consequences on human metabolism (nutrition) and immune system



## The Main Health Risks of Noise

- There is an absence of knowledge about the health implications of compound noise burdens involving exposure to noise from various sources under various circumstances.
- There are currently also gaps in knowledge regarding the relationship between cardiovascular disease and simultaneous exposure to noise and air pollution

**The data available to document the impact of environmental noise on health are largely inadequate.**



## Economic aspects of noise

**Estimates on the annual financial damage in the EU due to environmental noise cover a range from 13 to 38 billion euro.**

Examples of elements that contribute to the economic damage are

- a reduction of the price of housing
- medical costs
- costs of reduced possibilities of land use
- cost of lost labour days.

These do not cover all effects and all noises. Consequently the actual damage due to environmental noise is likely larger than indicated by the published studies.



### Noise related activities of State Health Office (LGA)

- Information activities aimed at protecting teenagers against leisure noise induced hearing damage
- Study: Traffic noise exposure and stress in children
- Study: Hearing threshold levels and auditory habits of school children
- Study: Noise and sleep disorders in children and possible health impact
- Study: Combined effects of air pollution and noise on children's health
- Guideline: Implementation of Directive on Environmental Noise 2002/49/EC



### Noise related activities of State Health Office (LGA)

LGA participates in EU - WHO projects:

- **ECOEHIS:** Development of a system of Environmental Noise and Health Indicators
- **NNGL:** Development of guidelines for night time noise exposure
- **Burden of disease from environmental noise**

State health Office (LGA) will be designated as WHO Collaborating Centre on noise, housing and health



### The EU Noise Expert Network



### The Directive on Environmental Noise (END) (2002/49/EC of 25 June 2002)

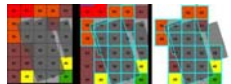
It requires competent authorities in Member States:

- to produce strategic noise maps (exposure assessment)
- to inform the public about noise exposure and its effects
- to draw up action plans addressing noise issues.



### Good Practice Guide for Strategic Noise Mapping and the Production of Associated Data on Noise Exposure

- Implementation of the END: difficulties with data procurement, harmonisation and management
- strategic noise maps will be based on measurement or computations of noise levels of different sources at the most exposed façade of dwellings and buildings using 10 metre grid spacing
- Lden (the day-evening-night noise level)
- Lnight (the night time noise level)



- The collected data will be made available by the EEA



### END: Roadmap

The first round due by 2007/2008 will cover

- agglomerations with more than 250 000 inhabitants
- main roads with more than 6 million vehicle passages a year
- railways with more than 60 000 train passages a year
- major airports with more than 50 000 movements a year

The second round due by 2012/2013, this will cover

- agglomerations with more than 100 000 inhabitants
- main roads with more than 3 million vehicle passages a year
- railways with more than 30 000 train passages a year



## ECOEHS:

### Environmental Noise and Health Indicators

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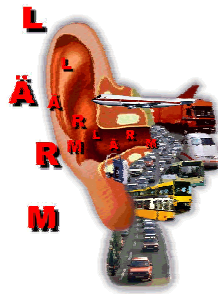
- Population exposed to various noise levels ( $L_{den}$  und  $L_{night}$ ) by different sources
- Existence of national policies to reduce exposure to leisure sounds

- Cardiovascular diseases and deaths due to noise exposure
- Annoyance and sleep disturbance due to noise



## WG 42: NOISE

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The work in WG 42 represents a huge challenge.

