

VALIDATION OF HARMONOISE/IMAGINE TRAFFIC NOISE PREDICTION MODEL BY LONG TERM NOISE AND TRAFFIC MONITORING

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1. ABSTRACT

In June 2002, the European Directive on the Assessment and Management of Environmental Noise (2002/49/EC) was accepted and came into force. Under this Directive, member states were obliged to produce strategic noise maps of major roads, railways, airports and large agglomerations by 30th June 2007. During the first round of noise mapping the national prediction methods and so called interim methods were allowed. Nevertheless, already in 2001, under the 5th Framework Programme, the HARMONOISE project was started with a goal to establish a common assessment method for noise mapping of road and railroad sources. A following project called IMAGINE was started in 2003 to refine methods proposed by the HARMONOISE and to include modules dealing with airports and industrial sources.

The basic principle of so called "HARMONOISE/IMAGINE" model is to provide separate, but well harmonized, modules for sources description (road traffic, railroad traffic, air traffic and industrial sources) and for propagation. This paper is however focused only on the module describing road traffic noise source. Figure 1 presets the basic structure of the HARMONOISE/IMAGINE model and its modular construction.

In 2005 the Technical University of Gdansk built and started to operate a noise, traffic and weather monitoring station on one of the major roads close to Gdańsk. Now results are available of over 3 years of continuous monitoring. The follow up of the monitoring is carried out as a part of the national project sponsored by the Polish Ministry of Science and Higher Education that deals with noise monitoring of urban areas by means of teleinformatic and GIS. The paper presents validation of the model performed on the base of those results. Moreover, it describes also seasonal deviations from the yearly

averages, as well as, it contains critical analysis of the data and procedures included in the model and suggestions of improvements. One of the problems with the HARMONOISE/IMAGINE model is overestimation of propulsion noise of heavy trucks in comparison to the rolling noise. Another problem is specific procedure for establishing correction factors during deceleration.

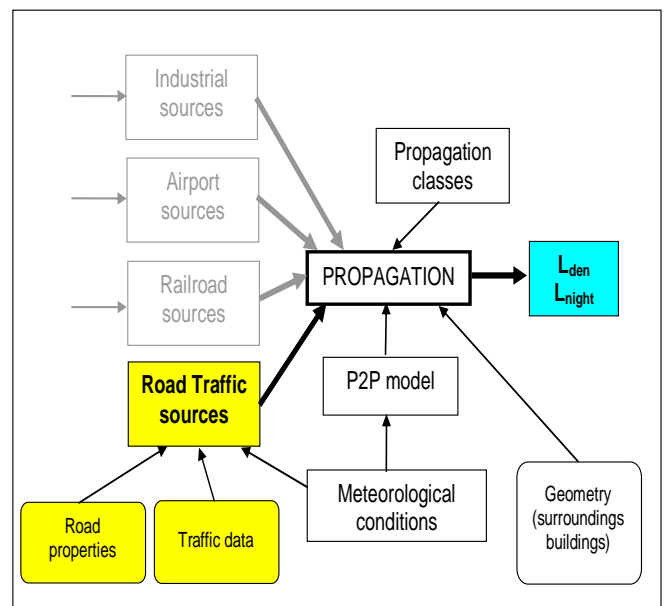


Figure. 1 *Basic structure of HARMONOISE/IMAGINE model*